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GLEANNINGS

IN BEE CULTURE

CONTENTS

MARKET QUOTATIONS.....	575
STRAWS, by Dr. Miller.....	583
PICKINGS, by Stenog.....	585
Conversations with Doolittle	586
BEE-KEEPING AMONG THE ROCKIES	587
Pear-growers and Bees	588
Cheap Increase	588
EDITORIALS	589
Brick-honey for Summer Trade.....	589
Frank Benton and the Bee-keeping Industry.....	589
Our Western Department, and Editor.....	589
Brick and Bag Honey in Warm Weather	590
GENERAL CORRESPONDENCE.....	592
Making One's Own Hives	592
Top-bars, their Relation to brace-combs	594
Ontario Co. Bee-keepers' Convention	596
Foundation made from Foul-broody Combs.....	596
Pickled Brood; Cause and Cure.....	597
Honey Packages.....	597
Scraping Sections	597
Selling both by Weight and the Piece	599
First Swarms	600
Planged Cups	601
HEADS OF GRAIN	60
To get Largest Increase by Dividing.....	603
Special Hive-ventilator	603
Modern Queen-rearing	605
A Frame-hook	606
A Method of Fastening Foundation.....	606
Sublimated Sulphur.....	607
Putting Honey in Boxes; Honey Candying.....	607
Opium plant Destructive to Bees	608
Soil Infected with Sweet-clover Bacteria.....	608
Honey 4 Years Old.....	609
OUR HOMES.....	610
TEMPERANCE	612
SPECIAL NOTICES..	620

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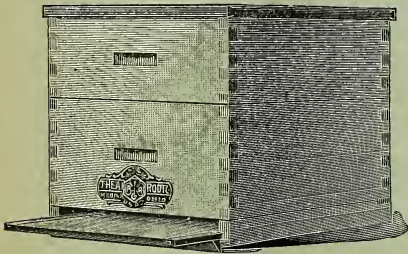
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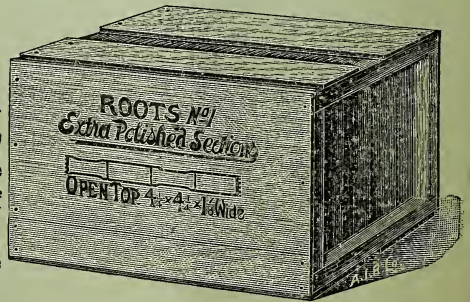


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GLEANINGS IN

BEE CULTURE

A JOURNAL DEVOTED
TO BEES,
AND HONEY,
AND HOME
INTERESTS.

ILLUSTRATED
SEMI-MONTHLY

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No. 12



AT THE RISK of being called a careless observer by Bro. Doolittle, I must say that I have had satisfactory results with leather-colored Italians as comb-honey producers.

THAT MAN MURRAY is trying to get me into trouble by sending what he calls a straw with thorns on it, asking the following: "When blackberries are red why are they green?" I don't know; but *are* blackberries ever red? If a berry is either green or red, how can it be a *blackberry*?

A. I. Root tells us, p. 558, that when the balls of earth of three or more plants are squeezed together there is no trouble in separating them when they reach their destination. Beg pardon, old friend; but I have had so much trouble in that way that I'd give more to have each plant wrapped separately.

AT LAST we are told for the first time that phacelia is of some value in this country for fodder, p. 553; but we are also told that it is hardly worth while where alfalfa flourishes. Now can Mr. Luhdorff kindly tell us any thing about the nectar on an acre of phacelia as compared with an acre of alfalfa?

"COLUMBIA" foundation, which Stenog mentions, page 533, seems to be the same as that of which J. Y. Detwiler, if I am not mistaken, sent out samples many years ago. Possibly they've discovered some little kink in Germany by which it can be made a success. The name of the man who puts it on the market, Otto Schultz, is a pretty good guarantee as to its value.

THAT QUEEN that laid eggs on the side of the cell, p. 551, reminds me that once I had

an imported queen that did so when I first got her, but after a few days she laid all right. [Yes, we have had other examples of a similar character. Sometimes it is difficult to get a customer who has paid \$6.00 for a queen to be satisfied until he can see what she will do. He wants another one right away.—Ed.]

EXCLUDERS are almost a necessity for comb-honey colonies with contracted brood-nest, says the editor, p. 552. Perhaps they are just as much a necessity with full brood-nest if small starters are used in sections with little or no drone comb in the brood-nest. In that case the bees will build drone comb in the sections, and the queen will go up to lay there. With full brood-nest, and sections filled with foundation, I don't find excluders necessary. [I accept the correction.—Ed.]

I SEE by the dailies that the postoffice department is soon to establish a censorship over newspaper advertisements, and papers with objectionable advertising are to be excluded from the mails. When that goes into operation, don't you think the mails will be light for a time? [This is a splendid move. GLEANINGS has nothing to fear from objectionable matter in its advertising pages. The ultimate effect of this act on the part of the government may be to give the honest advertiser a better chance to do something.—Ed.]

G. M. DOOLITTLE, page 534, advises that the honey-producer shall breed queens from the right mother, and pay no attention to the drones that meet them, because the crossing will give vigor. Suppose I get a choice queen from Bro. Doolittle, and breed from her; and suppose the young queens have a chance to meet drones only from colonies that last year distinguished themselves as the best honey-gatherers: don't you believe I'll get better results than if those queens meet drones from the poorest honey-gatherers?

I AM SURPRISED to find, p. 532, a Straw about Rietsche wax-presses that is incomplete, not saying at all what I intended to

say in full when I wrote. I said it had seemed strange that such presses were used by the thousands in Europe and not at all here. And I intended to say why it no longer appeared strange. You say, Mr. Editor, "I suppose the principal reason is, there is no one on this side of the Atlantic to push it." No, that's not the right answer. It can be given in a few words: In Europe it's difficult to buy pure foundation. In this country it's impossible to buy any other.

I BELIEVE I shall be doing a real favor to any young bee-keeper who wishes to be in the front rank in bee-keeping, and to get out of it all the enjoyment to be had, if I urge him to get "The Honey-bee," by T. W. Cowan, which book has just been revised thoroughly and brought up to date. Even if you have all the excellent text-books on bee-keeping published in this country, you need this little work to teach you the natural history, anatomy and physiology of the little toilers that bring us our bread and butter. You can get it from The A. I. Root Co. for \$1.00 [I am proud to possess a copy of this little work. Mr. Cowan is so careful in his statements that I consider him an authority on any scientific subject on which he writes.—ED.]

IF YOU SUCCEED, Mr. Editor, in perfecting that scheme of having a National brand for the honey of National members, p. 536, then it would be a good thing to spend some good money advertising. If it pays to advertise glucose, why not a better thing? [I do not believe the bee-keepers of the country know how much their product is suspected of being impure or manufactured. The general suspicion that has been created by these newspaper canards has resulted in a stagnant market—unusually so at this time of the year—and I can account for it in no other way than that there has been a lot of these manufactured-comb-honey stories afloat. I can scarcely meet a person, one who knows nothing about bee-keeping, but honestly believes that comb honey is manufactured. It is high time that something were done to dispel this delusion. The National Bee keepers' Association would not be interested in putting out manufactured goods; and it seems to me perfectly feasible and proper that the National should put the seal of purity on all the honey put out by its members; then if any one says that such honey is adulterated or manufactured, the National would have a splendid chance to bring a case for heavy damages.—ED.]

A HONEY-PRODUCER, according to Bro. Doolittle, p. 534, should breed from a good queen and any thing that happens in the line of drones; but he says a "queen-breeder can not work along the line a honey-producer can;" if he does, his stock will deteriorate. Of course, then, the stock of the honey-producer who follows Bro. Doolittle's advice will deteriorate, and Bro. Doolittle doesn't say what he is to do about it. One

way, no doubt, would be for the honey-producer to buy a choice queen each year, and for many that might be an excellent plan. But would it be the best plan to keep the two classes entirely distinct, the honey-producer each year purchasing a queen from a man who produces no honey, but gives his whole attention to rearing queens? How is the queen-breeder to select the best stock if he knows nothing about the honey-gathering quality of his bees from actual observation? He must either be a honey-producer or depend upon the selection of some one who is a honey-producer. First or last it is the honey-producer, even if he be also a queen-breeder, who must be depended upon for selection, and the chance for selecting the best is a good deal better with the man who has a thousand colonies than with the man who has ten. Kind o' looks as if best results might be attained if queen-rearers and honey-producers would work together to select the best and suppress the worst, not only of queens but drones.

E. W. ALEXANDER tells us formaldehyde is all right for black brood but no good for foul brood, page 536. But don't bacteriologists tell us the bacterium of each is the same? [Yes; but the two diseases are so dissimilar that it does not seem possible they can be one and the same. If I am correct, the same bacteriologist who said that the microbe of black brood was *Bacillus alvei*, afterward examined a sample of real foul brood and stated that it was totally different. Mr. Thos. W. Cowan examined the foul brood that we had here at Medina, with a microscope, in 1887, and he distinctly recognized the *Bacillus alvei* of Europe. It seems to me probable that this germ may be present in black brood; but that it is the primary cause of it is hard to believe.]

Mr. Alexander, of York State, one of the most extensive bee-keepers in the world, has found that black brood can be cured with formaldehyde, but not foul brood. The inspectors of New York have been in the habit of making sharp distinctions between black brood and foul brood, if I am correct. Of course, it would be possible, I suppose, for one germ to manifest itself in different forms; but in this case the two diseases should show more points of similarity. While foul brood and black brood are alike in color and in the appearance of the comb, the character of the dead matter is totally different, as is also the odor. Its manner of spreading is different, because foul brood can be held in check with comparative ease by one who understands how to handle it. But black brood has not always yielded to treatment, although the inspectors, when their directions were followed out carefully, have been fairly successful.—ED.]

PLEASE tell us what is a Titoff cage; also how *Titoff* is pronounced, page 550. [The Titoff cage was illustrated on page 134. While the present cage has been modified

slightly, the main principle is there shown. If you want to know about it, read our little book, "Modern Queen-rearing," by G. W. Phillips. By the way, Mr. Titoff was commissioned by the Russian government to go to America to study bee-keeping. He has spent something over a year at our plant, and expects to go west soon to work with some of the extensive honey-producers in order to learn modern American methods. He is a young man of exceptional ability, and a tremendous worker. There is no doubt that he will be a large factor in introducing modern American bee-keeping into Russia. I am not sure but some of the other European countries would do well to follow Russia's example.

The name *Titoff* is pronounced as if the *i* were an *e* — Tee-toff, the accent coming on the first syllable.

There is a bare possibility that he will attend the convention of the National at St. Louis. If so, he will probably be a representative of the Russian government. He is thoroughly posted in modern methods of queen-rearing, having tested them all at our yards, of which he has had entire charge for several months back. He is perfectly competent to go into any yard and rear queens, but now desires to learn the practical side of honey-production. — Ed.]



The *Gazette Apicole*, a French journal, gives the names of 78 bee-papers; of these 15 are in the English language; 23 are in French; 16 German; Italian, 4; Russian, 9; Dutch, 4; Spanish, 3; Norwegian, 1; Swedish, 1; Bohemian, 1; Roumanian, 1.

WESTERN BEE-JOURNAL.

Vol. I. No. 1 of this new journal is out, published by P. F. Adelsbach, Hanford, Cal., where the dispute between the pear-growers and bee-men took place. That's just where we need a representative. The new exchange is very good in every way. I quote a few words from it relative to bees and fruit; for although bee-keepers understand the matter very well, others do not, hence we need all the evidence we can get. Mr. G. W. Thrasher, of Gridley, Cal., says that "he had a pear and almond orchard at his home in Butte, and the last few years he had demonstrated beyond a doubt that the bees assist materially in propagating the fruit. 'For years my pear-orchard bore but little,' said Mr. Thrasher, 'and I had about decided to dig up the trees and plant almonds. By chance I put

a colony of bees in my orchard, and, to my surprise, from that season to this my pear-trees have borne heavily, the result, undoubtedly, of the work of the bees.' This is but natural. The honey-bee fills the same position to the flowering fruit-trees that the fig-wasp does to that fruit. The Smyrna fig-trees that were planted on the Stanford ranch, at Vina, were barren until the wasp was brought out from Smyrna and introduced in the orchards."

In speaking of making one's own hives, E. M. Whiting says:

I sent for a saw table and a few extras to go with it, costing about \$35. I went to the foundry and gave them \$5 to cast me a horse-power. I made my own shafting, got some cog-wheels from an old mowing-machine, made some wood pulleys, the whole thing, labor and all, costing me about \$100. I made all my own hives and a good many for my neighbor bee-keepers. I could cut 11 end-bars for Hoffman frame at one round of the horse.

In that case Mr. Whiting made it pay *as a manufacturer* for others; but would it pay *all* bee-keepers to attempt what he accomplished?

In speaking of bees and alfalfa M. G. Crowder says:

Yuma Valley is a very productive country of some 38,000 acres of river-bottom "made" land. The soil is about six feet deep. Our principal crop is alfalfa, which produces seven crops per season, or something like ten tons to the acre.

My two years' experience with bees in this valley is not the best, by reason of the haying industry. Prices of hay run from \$10.00 to \$12.50 per ton, so the farmers make good use of all the time they have in cutting the alfalfa for hay. Alfalfa is cut every 30 days, so it scarcely has time to bloom. Thus there has really been no fair chance for a good test along the line of honey productions.

IRISH BEE JOURNAL.

This always interesting journal tells of a Mr. James Mason, aged 47, who was jilted in a love affair 13 years ago in Essex, Eng. Instead of committing suicide he has retired within a fortress of thick hedges and barbed fencing, surrounded by a ditch 10 feet deep and 12 wide. He shuns all human creatures, and devotes all his affection and care to the bees and the flowers which he grows for them.

There has been considerable death of bees through feeding with sugar barley laid on the tops of the frames. The food (?) melted and smothered the bees.

BRITISH BEE-JOURNAL.

In giving the approximate number of colonies of bees in various countries, the editor says:

United States, 4,500,000; Germany, 2,000,000; Austria, 1,800,000; Spain, 1,700,000; France, 1,000,000; Great Britain, 500,000; Holland, 250,000; Belgium, 200,000; Denmark, 100,000; Greece, 50,000; Switzerland, 30,000.

If these figures are correct, the United States may well arrogate to herself the proud title of "the greatest bee country in the world." Just fancy a country producing honey which, loaded on cars, would make a train 25 miles long! Austria is undoubtedly one of the leading honey-producing nations, and excels in organization, for she has a Bee-keepers' Association numbering over 8000 members. Their income,

amounting to over £1500 is augmented by a public grant of about £600, and they insure all bee-keepers, irrespective of the number of colonies in their possession, for the small charge of less than 6d., guaranteeing to "make good any losses from foul brood, fire, theft, etc." In no other country on the Continent, however, is agriculture so well organized or so successfully carried on as it is in Germany; and her bee-literature is second to that of no other country, while for scientific knowledge of bee anatomy she stands an easy first.



WORKING FOR COMB AND EXTRACTED HONEY.

"Say, Doolittle; can I work my apiary for both comb and extracted honey at the same time and in the same year?"

"Well, Brown, I see nothing to hinder. Why do you ask such a question?"

"Because Jones told me he would not do it."

"It is not a question of what Jones would do, but one of what *you* want to do, is it not?"

"It looks that way. I have 50 colonies, and I wish to work 25 for comb honey and 25 for extracted. I use combs $5\frac{1}{2}$ inches deep in the extracting-supers, and the 4×5 sections for comb honey. My principal trouble is swarming during the honey-flows, thus interrupting work in the supers. Please tell me how you would work in both cases, and I shall be very grateful to you."

"In the first place, I should not expect to allow many (if any) swarms by natural swarming, from the colonies worked for extracted honey; for I believe more extracted honey can be obtained where the colonies have no desire to swarm than can be by any plan which inclines the bees to swarm."

"I am quite in accord with that; but how can I hinder their swarming?"

"Mr. Quinby told us how, years ago, when he said that, if a colony were given from 5000 to 6000 cubic inches for a hive, and this space was filled with comb, such a colony would not be likely to swarm; and in all of my operations with bees I have found Quinby to be very nearly correct on this point, and especially so if the honey is extracted from the combs not occupied with brood, as soon as the most of it is sealed over."

"Then why should I be bothered with swarming?"

"My idea of this matter would be that it is because you are using those $5\frac{1}{2}$ -inch combs in your supers. Why do you wish to use combs for extracting-purposes of that depth?"

"Because I got started that way from a colony or two that I bought from a man who worked for extracted honey."

"I have never been able to see any par-

ticular reason for using combs of any other than the same depth as the brood-frames used in the lower hive, for extracting purposes."

"But some use such, do they not?"

"Yes, I know that a few of our advanced bee-keepers do use combs in the extracting-supers, of a different size from those in the brood-chamber; but what few reasons have been given for such a course have seemed illogical when viewed from my standpoint. Have you any frame full of comb not in use, like those the bees are on?"

"Yes."

"How many?"

"Probably enough to fill twenty hives."

"Then as you have asked me to tell you how to work those bees, I judge I'd better tell you just how I would do it, and I would use those extra combs on twenty of the colonies I worked for extracted honey; and then if those colonies needed more room I would put the $5\frac{1}{2}$ -inch combs on top, working for full depth combs till I had enough such combs to supply all their needs. When this was effected, the $5\frac{1}{2}$ combs would be rendered into wax. Colonies fixed with full-depth combs as above, where the honey is extracted from them as soon as ripe, will not swarm, according to my experience; and, in my opinion, if you work this way you will secure the best possible results from the colonies so worked."

"This is something altogether different from what I had planned or ever worked before."

"If you have any doubts I can tell you how you (or any one else) can prove whether Doolittle (or any one who tells you of something new to you), is right or wrong, when his teachings are applied to your locality."

"How is that?"

"Just try the plan advocated on a *part* of your colonies, using your former plans with the rest, and this will prove the matter to your entire satisfaction. If the *new* plan proves good, then prepare to work the whole number you wish to work for extracted honey that way. If it proves not so good as the plan or plans you have been using, then drop it, adhering to your old plans till you strike on something better. By doing in this way you may go a little slower, but you will be sure you are right for *your* locality."

"Thank you. That is fair, I am sure. But what about working for comb honey?"

"In working for comb honey the bees must build their combs, or draw out foundation in the sections, at the best, and this places the bee-keeper where he will most certainly have more or less swarms, unless he hinders such by some profitable manipulation."

"What do you do along this line of manipulation?"

"Do you wish any increase?"

"I would rather have some increase, as I have not yet all the bees I wish."

"The shook plan which I gave in a late number of GLEANINGS was one having as

its object the doing away with all increase; but I have another plan which allows of a half increase, or one that gives one new colony from two full colonies at swarming-time, with no desire to swarm thereafter."

"That is just what I should like, as it would give me about the number of colonies I should like in the fall."

"Take a hive having seven of those empty combs you have on hand, and place it upon the stand of any populous colony which you have reason to think may swarm in a few days. Now select a frame from the brood-chamber which is nearly filled with honey, but having a very little brood in it, and set this comb (bees and all) in the center of the hive, thus making eight frames. Now set the sections, which were on the removed hive, on the new hive now on the old stand, and shake and brush all the bees off their combs down in front of the prepared hive, into which they will run as fast as shaken. Get the bees all out of the hive also, when you will put the frames of brood now beeless, back in the hive and set it down near another populous colony. Now take one of the combs of brood and carry it to one of your nuclei, which you have previously prepared, so you would have queens to use when you wished them, and exchange it for a comb of brood from the nucleus, having the queen and all the bees that may happen to be on it, taking this latter and placing it, queen, bees, and all, in the hive standing by the populous colony. Now fill out the hive with empty combs till the full number are in; and as soon as the hive is as you desire it to be for the next two days, set the populous colony to one side a little, and put this prepared hive in its place, and, later, remove this set-off colony to a new stand where you wish it to stay for the rest of the season. A day or two later, take the sections from the removed colony and place them on the hive having the frame from the nucleus in it; and in about a week put sections on the removed colony again. In this way you have on the stand of the first populous colony all of its bees and one frame from the old hive with a little brood to hold the bees in a contented condition, the queen in a prolific state, ready to take advantage of the empty combs you have given, and the sections they had commenced work on, all ready for their use, and all in condition for a large yield of honey, with no desire to swarm. Next you have nearly all the brood from the first colony, a young prolific queen and her attendant bees from the nucleus, together with all the field-bees and sections from the removed colony on the stand of the same, and that in a condition to carry forward the work already begun in the sections, and with swarming all done with for the season; while the removed colony is in perfect condition, lest the field-bees which have been drawn off by its removal, in just the right time to stop all idea of swarming for the season. And this colony will also be ready to go to work in the sections that are to be put on in a week or so

after the manipulation. All three are in the best possible condition to take advantage of the honey harvest, which will be at its commencement now, if you have timed your labor so as to have all done about three to eight days before your expected honey-flow."

"Well, now, that is worth knowing. How long have you used this plan?"

"For over 25 years, and it has always proved successful."



INTRODUCTORY.

In assuming the management of this department, I wish to solicit earnestly the personal co-operation of every reader of GLEANINGS residing in the western half of the United States, and more especially in those portions where arid and semi-arid conditions prevail. I wish to receive correspondence relative to all matters of interest to bee-keepers. This should embrace wintering reports, crop reports, prices, and, in fact, any information regarding the condition and welfare of the industry. These will be carefully digested, and presented in condensed form. If the western patrons of GLEANINGS will take hold with vim and enthusiasm, they can make this department, which has been instituted for their benefit, of great value to themselves—a sort of intelligence bureau, through which they may keep in touch with each other.

The beginner class may send me their questions or a statement of their troubles, and I will assist them to the best of my knowledge.

About July 1 I should like to begin receiving crop reports. I shall pay especial attention to crop matters, and I want my deductions to be as reliable as possible.

Bees began swarming May 20—too early for best results in Colorado. Better hold them back by judicious equalizing until a few days before the opening of the flow.

The bee-inspector of Fremont Co., Colorado, reports 75 per cent of the bees "rotten with foul brood." In 1902 this county was credited with 2000 colonies. By the way, I am informed that some good locations for apiaries are still open in that county.

In my opinion, the development of the "shook-swarm" system is the most important advance in apiculture in the past twenty-five years. It not only gives practical

control of swarming, but colonies may be made as strong as desired, with little probability of swarming.

This is the season when foul brood flourishes like a "get-rich-quick" joint. Likewise, it is the time when it can be extinguished with the least damage to the apiary. Prevention is easier and better than cure—keep a sharp lookout for it, and handle it promptly when found.

"What wages are paid to assistant apiarists in Colorado?"—is the substance of an inquiry from an eastern correspondent. I reply here, as, no doubt, many others are interested. Twenty to thirty dollars per month and board, dependent upon age, experience, and general qualifications.

Shook-swarms, to be successful, should simulate natural swarming as nearly as possible. In this relation it is of the utmost importance that the bees be caused to fill themselves with honey just before shaking. Neglect of this is a fruitful cause of the absconding of such swarms. A swarm literally gorged with honey will usually stay where it is put, and go right to work.

Lots of bee-keepers throughout the West are realizing this season the truth of that old, old proverb, "In time of peace prepare for war." The scramble for supplies is simply tremendous. Hives can hardly be had; bees are swarming, and the honey-flow is right at hand. It is the old story. I congratulate Morehouse every time I think of the 300 hives and 50,000 sections I have ready for the fray.

PEAR-GROWERS AND THE BEES.

Recently the pear-growers of Paonia, Delta Co., Col., bought up all the bees within flying distance of their orchards (some 400 colonies), and sold them at auction, the condition being that they be removed from that neighborhood. This action was taken on the supposition, supposedly proven, that the bees were instrumental in spreading the blight. This is not only a unique but a very sensible way to get rid of the bees, but—I very much doubt the efficacy of the remedy. The blight will continue to spread, as other insects are more guilty than the bees. It is not unlikely that the loss in quantity and quality of the fruit, due to non-fertilization of the blossoms, will be greater than from the blight incidentally spread by the bees, and I should not be surprised to see our little friends returned in triumph to "where rolls" the Gunnison.

CHEAP INCREASE.

One of the problems in many parts of our country this season is the replenishment of winter losses. This can be done rapidly and cheaply by the nucleus method, and its

simplicity commends it to those not highly skilled in apicultural manipulations. Take a frame of hatching brood, well covered with bees, a laying queen, or a ripe cell, and place them in the center of a hive of drawn combs. A frame of honey or sugar syrup should also be included. The earlier after the weather becomes warm and settled these nuclei can be formed, the better, though in Colorado they will succeed if started as late as the first of July, without feeding. It requires from six to seven weeks to develop them into full colonies, and they will be in prime condition to gather surplus honey from the fall flow. Fifteen or twenty good colonies may be easily increased to a hundred in this manner; and, if the season is fairly good, they will more than return their cost. They make the very best colonies for the succeeding year, as the queens are young and will be at their best. I made nearly one hundred such nuclei between June first and July first, last year. With the exception of one, all wintered, and to-day they are among my best colonies.

THE CROP PROSPECT.

The outlook for a crop of honey throughout the irrigated regions is generally good, excepting in Arizona and New Mexico, where the almost total absence of snowfall and spring rains has practically blighted all chances for a crop of surplus honey this season. In Colorado the winter loss amounted to about ten per cent, due very largely to queenlessness. The spring has been fairly favorable, and the colonies are in prime condition for the flow, which promises to open about June 15. Moisture conditions are highly satisfactory, the government station in Denver reporting a more than normal amount of precipitation since January 1. The only apparent drawback is, in some localities the alfalfa is badly winter-killed—not by cold weather, but by warm dry winds. Sweet clover is doing well, and in most localities is more than usually abundant. Conditions in Utah and Idaho are even better; the winter losses were trivial, and the few reports I have had indicate that the crop will be fully up to the average.

Viewing the situation as a whole, with the exceptions noted above, the outlook is very bright, and honey-buyers will not be disappointed if they depend upon shipments from the arid States for their supply of this toothsome sweetness.

I also believe that our bee-keepers will receive a fair price for their product, which, if the flow is good, and care is taken, will grade high. Considerable of last year's crop is still in the hands of dealers, but I note that it is nearly all "off grade," and will by no means compete with the new crop. In Colorado we export only the two grades, No. 1 and No. 2, and in the East they usually pass as fancy and No. 1. The "off grades" are either extracted or sold at home at a lower price.



THERE is an abundance of clover out, both red and white. The first few days of June were very warm; but it has now (the 10th) turned so cool that no bees can do any work in the field. We are daily hoping it will soon warm up.

ALL the supply manufacturers in the country, apparently, are having a big business in spite of the heavy winter losses. Some of them are making enlargements, just as we are. The great mortality throughout the lake region makes it hard to understand why there should be such a heavy trade.

BRICK HONEY FOR SUMMER TRADE; CUTTING UP A SOLID CHUNK FROM A SQUARE CAN WITH AN ORDINARY BUTTER-CUTTER, SUCH AS IS USED BY WHOLESARE BUTTER-DEALERS; A BIG FUTURE FOR BRICK HONEY.

LEARNING that butter in large chunks is cut up into bricks and rolls with a special machine having taut wires evenly spaced on a metal frame, we sent and got a regular butter cutter, and have been testing it this summer to supply our trade for brick honey. It is away ahead of the single-wire method of cutting as illustrated in GLEANINGS, both in quantity and quality of the work. The bricks can be gauged to a mathematical size; and, instead of cutting one brick at a time, four or five wires are forced through the mass almost as quickly as one wire. In the process of cutting, the wires sink slowly under the pressure through the chunk. If too great a pressure is exerted the wires are liable to break so that it is best to "make haste slowly." It would be a great scheme to use one of these butter-cutters in a grocery window on a big day. The public would wonder what you were cutting. Of course, possible buyers would ask dozens of questions, and that is just what you want. If you have on hand some samples about an inch square, wrapped in paraffine, and give them away on one day, the probabilities are you can get rid of all your old extracted honey in an incredibly short time.

I tell you, friends, there is bound to be a future for brick and bag honey. I would not call it "candied," but simply "brick" honey, and explain to your customers that, during cold weather, this is the natural state of all first-quality honey, for poor stuff would not solidify into bricks for retail purposes. It is simply a question of educating your own local trade, and selling honey right around home, for you can not sell it

outside until the public has learned to know what brick honey is.

FROM THE FRYING-PAN INTO THE FIRE; A CORRECTION CORRECTED.

A SHORT time ago a reporter for the Cleveland *Plain Dealer* visited our establishment, took a number of photos, and notes for an article. These have now been elaborated into an article, the same appearing in the Cleveland *Plain Dealer* for Sunday, June 12, and presumably it has appeared in Sunday editions of other papers. We explained at the time to the reporter the lies that are afloat about manufactured comb honey, and desired her (for she was a lady) to be kind enough to correct the wrong impression conveyed. To this she readily assented; but, unfortunately, and evidently with the best of intentions to refute the canard, she has made the matter worse, if any thing. The following paragraphs are somewhat misleading, to say the least. In speaking of the foundation and different processes of its manufacture, she says:

It goes to another machine, where it is made thinner and finer, and from there to another, where it is honey-combed and cut into appropriate lengths. This honey-comb is put into the hives to serve the bees merely as a foundation for their labors. It is distinctly a labor-saving device that men have adopted to get more of the honey itself out of the little laborers among the flowers.

A trip through the place is very interesting. They start you at the room where the honey-combs are made—the honey-combs, mind you, not the honey. The company has a standing offer of \$1000 for the man or woman clever enough to invent a way to make artificial honey, "paraffine and glucose," which is the imaginary formula sometimes given by carping critics.

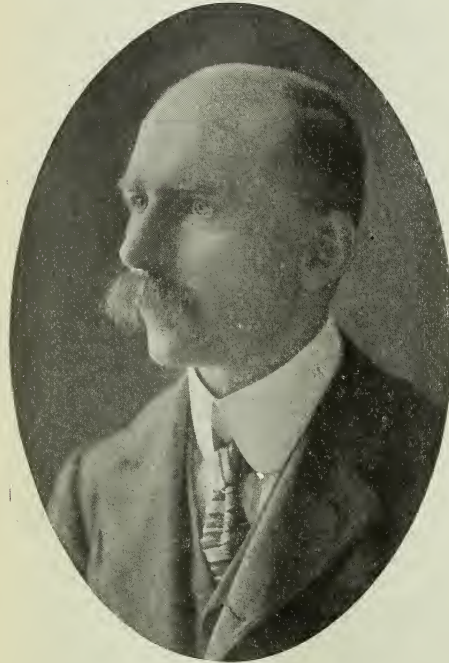
The only danger is that some reporter or newspaper writer may read this article carelessly, gather a wrong impression, and conclude that honey-comb is made at our plant, when in fact we make comb foundation, such as all bee-keepers are familiar with, the cell-walls of which are not deeper than a sixteenth of an inch. The general public is liable to jump at the conclusion that we, The A. I. Root Co., are making bogus artificial combs.

We have written to the publisher, and hope to have a correction.

A WESTERN DEPARTMENT AND A WESTERN EDITOR.

I AM pleased to inform our readers that we have engaged Mr. H. C. Morehouse, of Boulder, Col., to conduct (for a time at least) a "Western department" in GLEANINGS, entitled "BEE-KEEPING AMONG THE ROCKIES." The first installment is begun in this issue, and for the present will appear once a month. Mr. Morehouse is an old newspaper man, and formerly editor of the *Rocky Mountain Bee-keeper*—a journal that showed most excellent editorial ability—so excellent that, when I heard Mr. M. had sold out his paper, I immediately entered into correspondence with him with a view to getting him to edit a department in this journal. While he sold out because he had

not time to get up a whole journal, I finally prevailed on him to edit (at least for a time) one department in GLEANINGS. As he is one of the officers of the Colorado State Bee-keepers' Association, and is in close touch with all its workings, he will be in position to give valuable information relating to Western apicultural topics, particularly Colorado, where the conditions are so radically different from what they are here in the East, or that portion of the country known as the rain-belt—broadly speaking, east of the Mississippi. Mr. Morehouse has connections whereby he can reach all sec-



H. C. MOREHOUSE.

tions of his State and other portions of the great West, so that he will be enabled to give some idea of the quantity of the output and possible ruling prices. As he is an extensive and practical bee-keeper of over a thousand colonies, our readers can rest assured he will be able to furnish us something practical and useful. It will repay our Eastern readers to keep track of this department, for Western honey has come to be a big factor in the Eastern markets, and it is bound to be a still bigger factor in the future, because that portion of the country west of the Mississippi will undoubtedly in time produce the very much larger part of all the honey in the United States, if it does not already. Millions of acres are now being opened up to alfalfa, and this means alfalfa honey, which has now come to be recognized as a table honey of the first quality. California mountain sages will

never be less abundant, because they grow where farm crops can not live. While some of the Eastern trade prefer clover or basswood, the time will come when they will recognize alfalfa and sage as equal to the best.

Because of the importance of the great West, GLEANINGS has been considering for some time the need of getting a bee-keeper and an old newspaper man who is in position to keep in touch with conditions as they exist in the irrigated regions. In the realization of these hopes we feel that we are fortunate in securing the services of so capable a man, from all points of view, as our friend and editorial writer Mr. H. C. Morehouse. Just how long his time will permit him to serve us, remains to be seen; but we hope to hold him on our editorial staff for a time at least. Possibly later on he may be able to find time to prepare matter for every issue.

While we have a regular Western department, it must not be understood that the articles of some of our Western writers will be any less welcome than before.

BRICK AND BAG HONEY IN WARM WEATHER.

I FIND that, in warm weather, our brick honey wrapped in paraffine paper becomes soft, or is a little harder than butter that spreads nicely on bread; but it has not so far softened enough to make it run out of the paper. On very warm days the bricks will be quite soft, but can still be handled readily for retail purposes. Just as soon as the weather cools off, however, the honey hardens again, in much the same way that butter does. Last summer I was a little fearful that this bag honey would not be suitable for retailing in mid-summer, because one sample we had became so soft it began to leak. But we have a much larger amount of it on hand now, and I am pleased to report it is holding its shape very well. I would still, however, advise caution, and, so far as possible, get the trade to sell all candied honey before the approach of genuine hot sultry weather. That this candied honey is going to have a certain and positive demand as soon as the public is educated to it is very evident. Our employees continually call for it. We have some square cans of candied honey; and as fast as we use up our bricks we peel the tin off from one chunk, slice it up, wrap it in paper, and lay it out where the employees can see it. They seem to like it better than the liquid or even comb honey. One reason, I suppose, is that candied honey is a little richer in flavor, without the strong minty taste of the same honey in a liquid condition. One of our correspondents, Mr. J. S. Callbreath, calls our attention to this fact—one that I have often observed.

GREINER'S ARTICLE IN THIS ISSUE.

I WOULD call attention to a valuable communication from Mr. Greiner, in this issue.

The reader is requested to read especially that paragraph regarding the scraping of sections on coarse-mesh wire cloth. The experiment can be very easily tried; and if it works successfully it is a big thing.

There are some other good things in Mr. Greiner's article, and the reader should not fail to go over it carefully.

By the way, the Ontario Co. Bee keepers' Association, in New York, is a very lively organization. It is made up of some of the most progressive bee-keepers in the country. Their discussions would do credit to any of the best National conventions we have.

FRED W. MUTH AND FAMILY.

WHEN I attended the Hamilton County bee-keepers' convention at Cincinnati, last winter, I had the pleasure of meeting quite a number of bee-keepers and their better halves. Among the latter was Mrs. Fred W. Muth. She said something to the effect that she was making a collection of bee-keepers' photos, and would I favor her with my picture, or, still better, one of the family group of me and mine? To this I readily consented, but stated that as yet we had no family group picture but that I would have one taken, provided, however, Mrs. Muth would favor me with a picture of her family. "Agreed!" she said. Mrs. Muth has already performed her part of the contract, and I take pleasure in present-

ing a picture of which any mother or father might well be proud. Accompanying the photo Mrs. Muth sent a brief letter, which I am pleased to present to our readers.

Mr. Root:—I have three children to take care of. I am my own *biddy* and dressmaker, and do all my work from A to Z; indeed, I am kept very busy. Martha, age 11, at my right, is a great help at home, and can sew, and trim her doll's hats well; while Edna, age 9, at my left, claims she is going to be the schoolteacher.

Clifford, our sunshine, as his papa calls him, says he is going to be papa's honey-man, and, above all, I tell everybody I have the "sweetest" man in town—of course, a honey-man; why shouldn't he be sweet?

Cincinnati, O.

MRS. FRED W. MUTH.

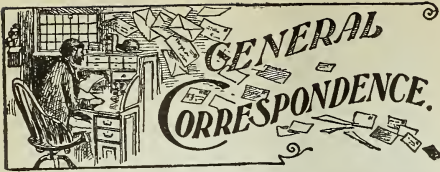
Mr. Muth himself is the "son of his father," the late Charles F. Muth, and, like his father, he is a very *sweet* man. He may be the "sweetest man;" but if I were to father the statement there would be some other "better halves" who would take issue with me. After all, if all wives felt this way there wouldn't need to be any talk about the looseness of our divorce laws.

Mr. Muth is agent for the Lewis Co.'s goods, and does quite a large business in buying and selling honey. While he is a direct competitor of the Root Co., we wish him success, and at the same time offer him congratulations upon the possession of so happy and bright-looking a family.

In a later issue we hope to present soon two more Cincinnati honey-men, for, be it known, Cincinnati is quite a sweet city.



FRED W. MUTH AND FAMILY.



MAKING ONE'S OWN HIVES.

A True Story With a Good Moral to it.

BY FRANK M'GLADE.

I have been reading several articles on the subject of cheaper hives, which have been intensely interesting to me, especially when I remember the first few years of my experience in bee keeping. I bought a saw outfit with power, and was going to make my own hives and a few for the neighbors; but when I came to put them into use they would not fit, and caused me much bother. I gave the whole thing up, and have been using factory hives and all things pertaining thereto since, and shall continue to do so as long as I keep bees; so, in view of my experience as seen through 25 years, I say, "Lord, pity the man who buys a buzz-saw."

Of course, it *can* be made to work if you buy expensive machinery and pay enough for it; but the money thus spent would buy all the hives an ordinary bee-keeper would need in a life time.

A buzz saw is a harmless-looking thing; but it has a habit of going in such a "wob-bly" way, to say nothing of its love for a

thumb or finger, that I am very much inclined to let it alone.

Why, the pleasure I derive from putting together a bunch of factory hives more than pays me for the extra cost that I would



"LORD, PITY THE MAN WHO BUYS A BUZZ-SAW."

save if I made them, to say nothing about the benefit to my temper to work at it all day in the spring. Sun shining warm, fish biting, bees humming in the trees, is like a poem.

When I think of the fits I used to have, and look at the fits in a lot of factory hives, I am more than ever confirmed in the eternal fitness of all things, especially those made by The A. I. Root Co. So my advice is, "Don't buy a buzz-saw; but if you think you must make your own hives, buy a 24-in. No. 12 skew-back Fulton hand-saw, a jack-plane, and a square. You can get pine boxes at the store for 5 cents each, on which you can practice, and it will not cost so much.

I winter my bees on their summer stands. I buy coffee-boxes at the stores for 10 cents each; take off the top and bottom; saw off 3 inches of the edge of one end and nail it inside. I set this case over the hive, which is about three or four inches larger than the hive. This I pack with clover chaff; take off supers; put over the frames a piece of rag carpet, and fill up with chaff for covers. I get steel roofing in rolls; cut pieces 36 in. long; snip corners, and fold down. These cost 20 cts. each; pack them thus, and let them go. Since doing this way I have not lost a colony. This last winter they were confined from Nov. 1 until Jan. 22, about 85 days continuously, with all



"I AM GOING TO MAKE MY OWN HIVES AND MY NEIGHBORS'—SEE?"

entrances open full width, and they all came through finely.

I have tried chaff cushions in supers, and have always had trouble with them, on account of their getting wet, and rotting and tearing. Now I use rag carpet. If you leave supers on, try a few packed with old rag carpets. I think you will be pleased with the results. Better say something to the women about it, before you take it, as they might not like it. Mine didn't.

HIVES MADE AT THE PLANING-MILL; ARE THEY ANY BETTER?

Several years ago I built up an apiary near Springfield, and decided to patronize a planing-mill for the hives. Surely, where they had ample power the saw would run right, and then I could pick out the lumber to suit myself; but I found, when I came to select the kind it seemed I wanted, the lumber was too dear, and I was compelled to take a cheaper grade. Well, I did the best I could. The man looked at his watch, pushed the lever, and away went that saw, and it looked as if



"THE FITS I USED TO HAVE, AND "THE ETERNAL FITNESS OF ALL THINGS."

all would be plain sailing; but before I got through I saw my mistake, and heartily wished myself out of it. In the first place, the man knew nothing of what I wanted. He was competent enough to handle the machines and get out an order for panel doors, or sash and blinds; but a hive was out of his line, and I had to tell him as we went along; and I tell you, for a greeny to go in there and try to measure and figure and count with that old saw running at the rate of \$1.00 an hour soon gets one rattled, or it did me. Well, after it was all over it looked as if I must have selected lumber with strings in it, for the ends looked like the frayed end of a piece of rag carpet, and were beautifully corrugated; and when I put them up I felt all the time that I ought to have iron rods to hold them together.

I want a hive specialist to make my hives, and don't want any better than the kind they make at Medina.

Pataskala, O.

[It is not impossible to get "bad fits" on factory hives if the dovetailing should happen to be done when the lumber is not quite dry. It is *then* that the manufacturer gets "particular fits."—Ed.]



"WHY, THE PLEASURE I DERIVE FROM PUTTING TOGETHER A BUNCH OF FACTORY HIVES MORE THAN PAYS THE EXTRA COST."

TOP-BARS THICK, MEDIUM, AND THIN.

Their Relations to Brace-combs; Nomenclature.

BY S. T. PETTIT.

While perusing the bee-papers I notice that some writers use the terms "brace-combs" and "burr-combs" indiscriminately. Indeed, I opine that the average bee-keeper has no very well defined discriminations between the two kinds. It is well to have all names and terms well defined.

Recently I have been looking over the glossary of the A B C book for your definitions of brace-combs and burr-combs; and now I am of the opinion that, like almost all human first efforts, they may with profit be revised. A good many bee-keepers can not subscribe to them as they are; so, in order that we may perfectly understand each other, and be understood by others, I will in this article ignore the terms referred to and use, instead, the term "wax," always mentioning just where the bothersome "wax" is. I am sure I can make myself better understood by so doing. I take this liberty because our authority, Dr. Miller, has set or made a precedent, p. 791, 1903. I am aiming at preventing the deposit of wax where we do not want it, regardless of names just now, by the use of a proper top-bar.

I believe there is no part of the interior construction of a hive that performs a more

important function than the top-bar, standing as it does right in the road to the supers; and that its improper make-up will cause more mischief than the improper construction of any other interior part of the hive, except that of the queen-bar, or excluder. Indeed, I am not sure that even the queen-bar should be excepted. Then the very best possible should be the aim. But among the great variety in use, the question is, "Which is the best?" or has it yet been born? The answers on page 132, *American Bee Journal*, to the questions, "Would you use a frame with thick top-bars? If so, why? If not, why?" afford quite a study, and give some information. First, we learn that those who answer in the affirmative do not all mean the same thing; nor do those who answer in the negative. Mr. P. H. Elwood says, "Yes, a half-inch." Rev. M. Mahin says, "I would not. I have always used a top-bar only $\frac{1}{2}$ inch thick." One calls $\frac{1}{2}$ inch thick, and the other regards it as thin. If the question had been specific enough to ask, "What thickness do you prefer?" likely the desired information would have been given. My purpose in this paper is to throw some needed light if I can. Of those who give definite figures, only three use so much depth as $\frac{1}{4}$ inch, while ten use $\frac{3}{8}$ and under.

It seems pretty clear that Mrs. J. M. Null voices the views of a large majority of



AN OUT-APIARY OF 95 COLONIES IN AUSTRALIA. SEE PAGE 604.

those who answer when she says: "I prefer to have the top-bars of just sufficient thickness to secure the strength needed. I prefer honey in the brood-nest or super to wood."

I am not a little disappointed that only two make any specific mention of wax *between* top-bars. They are what gives the most trouble. A few strikes with a suitable hoe will clean the tops of the top-bars in short order. But it is, indeed, a very different job to get the wax from between top-bars.

Mr. G. W. Demaree says, "A too thick top-bar is a waste of room, and invites the bees to increase the nuisance known as burr-combs between the top bars."

Being a believer in thin top-bars, and knowing as I do that there will be less wax between thin than thick ones, I here give a selection of what some others say that supports my claim.

At the last meeting of the O. B. K. A. Mr. J. B. Hall said, while discussing the best means of keeping combs in place while moving bees, that he had no trouble; there were burr-combs enough for that, or words to that effect. I am much obliged to Mr. Hall for that candid admission, as it removes some misunderstandings. Mr. Hall uses a $\frac{3}{8}$ -inch top-bar.

Mr. Coggs shall says, "It is not necessary to have $\frac{3}{8}$ -inch top-bars. The width is what prevents burr-combs in New York—GLEANINGS, page 485."

Dr. Miller uses a $\frac{3}{8}$ top-bar, so I repeat what he once said when speaking to Ed. Root: "I attach more importance to J. M. Mack's tool than you, for I can hardly agree that the accumulation of wax and propolis between top-bars does no particular harm. It means a good many bees killed if you don't go slow, and in time the accumulations become such that the spacing is great-

pendicular spaces. May I ask the reader to dwell a little upon this statement?"

Let us endeavor to get at the truth of what is the best thickness of top-bars for all Canada and all the United States except those localities where climatic conditions and quality of timber may possibly require a top-bar somewhat different from ours in construction. The arguments I presume that weigh the most with the seeker of truth are, carefully conducted and exhaustive experiments, and attentive and varied observations.

To make myself better understood, I am sending you a photo of sections of top bars, the sides of which are of unequal thicknesses. By placing frames with such top-bars in hives as shown in the figures above you have virtually thin and thick top bars alternated through the hive; that is, two thin sides together, a fair representation of thin top-bars; then two thick sides together, which represent thick top bars (of course, about $\frac{1}{4}$ to $\frac{5}{16}$ inch bee-spaces between the bars). In one figure the sides are respectively $\frac{3}{8}$ and $\frac{7}{8}$, and in the other $\frac{5}{8}$ and $\frac{7}{8}$. The width is $1\frac{1}{8}$ inch.

Nearly a quarter of a century ago I made quite a large number of frames with such top-bars, and tested them in the brood-chamber, and, later, in the extracting-supers. Some of them are still in use in the supers, and during all these years I have seen more wax between the thick sides than between thin sides. For many years no care has been taken to place them as shown in the figures; but they happen so once in a while. In the mean time I used black, Italian, Cyprian, and Carniolan bees and their crosses; and in *every instance* coming under my observation there was no departure from the universal rule—the thicker the top-bars, the more wax between them; and, *vice versa*, the thinner the top-bars,



PETTIT'S SUGGESTION FOR TOP-BARS.

er."—GLEANINGS, p. 791, 1903. And more: If any one will take time to look through Dr. Miller's excellent new book, "Forty Years among the Bees," and take a look along the sides of the eight or ten frames therein shown, he will be pretty well convinced that the deep spaces between $\frac{3}{8}$ -inch-thick top-bars are irresistible temptations to the bees to occupy them with wax. A thinner top-bar, and the consequently shorter space, alleviates that temptation just in proportion to the shorter or shallower per-

the less wax between them, all other things being equal. I took both comb and extracted honey over such top-bars for years. And, further, I took comb honey for years over top-bars ranging in thickness from $\frac{3}{8}$ to one inch, and the showing was always the same.

It will be gratifying to me if others will experiment and observe carefully. I had no axes to grind, but I desired to abate the wax nuisance. The $\frac{3}{8}$ top-bar properly spaced gives good results in that regard,

but I would chose a thinner one if practicable. Mr. Editor, by your indulgence, in my next I will point out other advantages of thin top-bars. Now that forced swarming is so largely coming into use, it is of much importance that the wax bother between top bars be abated.

Aylmer (West), Ont., Can.

[It would be difficult to make a glossary that would have terms that would suit every one. After all, nomenclature is a good deal a matter of custom and general usage. You can't change a name that is accepted. The word "burr-combs" means those that are built *on top* of the top-bars. *Brace-combs* are those that are built *between* them—bracelike—hence the name. I can not see for the life of me why "brace combs" is not an exact and appropriate name.

You have given some good arguments in favor of a medium thick top-bar. We had just that kind of bar some three or four years ago; but in response to requests we increased the thickness to $\frac{3}{8}$; but for all that, I am inclined to think it would have been better if we had stuck to the old thickness— $\frac{1}{2}$. You have probably made this one question a little more of a study than the average person—the relation of brace-combs, combs between top-bars—to the thickness of the same. Possibly we may yet adopt a thinner bar.—Ed.]

ONTARIO CO. BEE-KEEPERS' CONVENTION.

Reminiscences and Comments; a Good Article.

BY F. GREINER.

When, upward of 50 years ago, a few bee-keepers of Germany conceived the idea of holding annual conventions, and sent out invitations to the other bee keepers of their acquaintance, one of them replied that he did not see any necessity for attending such gatherings, as he knew all there was to be found out about bees. When we now look back and see what has been found out about this little insect, we almost feel sorry for a man who could have any such idea of his own knowledge. We to-day may know a great deal more than this man did; but we are still far from knowing all, and it will certainly pay us to be on the watch and get what information we can wherever we can. Bee keepers' meetings are now not only social gatherings, although even as such they are valuable, but they help to disseminate knowledge; they help us, encourage us, they return us every cent they cost us, and much more. It is a great pity that so many, who might, do not avail themselves of the opportunities they offer. In many localities, for instance, the bee-keepers are very much stirred up about foul brood. Undoubtedly they have reason to be. Would it not be wise in us "who do not know foul brood," to post ourselves, to find out all about it, particularly if this knowledge is brought almost right to our doors?

IS IT SAFE TO USE FOUNDATION MADE FROM WAX OF FOUL-BROODY COMBS?

One of the topics on the program of the Ontario County Bee-keepers' meeting in Canandaigua, Jan. 6 and 7, was foul brood, although the dread disease had never made its appearance in this part of the State. The man to handle the subject was no other than Mr. N. E. France—a man who has had a very extended and varied experience with the disease, and one who could be relied upon. I confess I came away from our convention feeling a great deal easier, and much better prepared to cope with the disease should it appear in my yards, although I have studied and read for 25 years all about foul brood I could find. Let us review a few of the things Mr. France told about.

1. The so called McEvoy treatment, if followed to the letter, has cured every case of foul brood Mr. France has ever met.

What is the cost of treatment? That is a grave question. Mr. F. answers it in this way: He found an apiary of 200 colonies badly infected or diseased. All colonies had to be treated. The obtained combs were melted up and made into wax. All hands, the good woman of the owner included, worked all night rendering the combs into wax and filling the boiled frames with the foundation made from it on a given foundation-press. The next day the colonies could be placed on the foundation-filled frames; the hives were also boiled, and so was the honey, which latter was heated to a temperature not over 210 degrees, and fed back to the bees as quickly as possible. Not counting the rendering of the combs, the whole operation of making the change from hives full of foul brood to clean hives filled with clean sheets of comb foundation amounted to just 16 cents per hive, and the colonies were left in most excellent condition to take hold of the honey-flow. Just think! a whole apiary of 200 hives, full of crooked imperfect combs, drone combs, etc., changed to combs as perfect as can be, all for 16 cents per hive! I feel inclined to give my bees a like treatment just for the sake of the perfect combs to be obtained thereby. In the case related, nothing was lost except some unhatched brood. Every thing else was returned to the bees—hives, frames, wax, honey, within 24 hours.

The owner of another apiary could write to Mr. France some time after the bees were treated by the McEvoy plan: "The occurrence of foul brood in my yard has been a benefit to me. The colonies which had been treated for foul brood have given me more surplus honey than the healthy colonies not so treated."

The rendering of foul-broody combs into wax, and using the obtained wax for foundation, produces no bad effect, so says Mr. F. To test this matter thoroughly he had obtained quite a quantity of badly diseased combs from different bee-yards. They were made into wax under moderate heat. Finally the wax was made into foundation

by one of the regular foundation-manufacturers, Mr. France standing watch with a thermometer, so that an overheating of the wax should not take place. When his little batch of foundation was done he took it and used it in 60 hives in several different yards where foul brood had never visited, so far as could be ascertained. Three years have now gone by, but no disease has as yet made its appearance.

Another confirmation that wax of foul-broody combs can be safely used for foundation was brought to notice by Mr. W. Z. Hutchinson, saying that Mr. R. L. Taylor had made wax from diseased combs by solar heat alone, made it into foundation, and used it in clean hives. No disease had come from it.

It seems from all this that foul brood is not so contagious as I was led to believe.

PICKLED BROOD; HOW CAUSED AND HOW CURED.

Speaking of pickled brood, Mr. France said it was not a contagious disease, and is produced only by starvation, usually occurring during the honey-dearth between dandelion and clover bloom. To prove the correctness of this, Mr. F. selected a large apiary which had in previous years been regularly afflicted with the disease. Every other row was lightly fed every night during the spell mentioned. No colony so fed contracted the disease, but the others did. His conclusion was that feeding will always prevent or cure pickled brood. Feed any way when there is a let-up in the honey-flow, between the flows.

HONEY-PACKAGES.

Mr. France, being an extracted-honey man, was considerably "pumped" on the matter of producing and selling the article. As a retail package, he did not speak with favor of the Mason glass can. The green color of the glass gives the honey a bad appearance; besides, the honey siphons out and besmears the can. He prefers a tin package entirely covered with a flashy label. For large packages he would rather handle a 500-lb. barrel than a crate of two 60-lb. cans. They are back breakers, he says.

A KINK IN HANDLING A CRATE OF SQUARE CANS.

I want to mention here a Coggs shall trick of handling the crates holding two 60-lb. cans. He tilts the crate on the edge cornerwise, and thus slides it over the floor at—well, lightning speed, thus avoiding the carrying of them. Of course, eventually they will have to be lifted if to be tiered up.

HONEY VINEGAR VS. ACID VINEGAR FOR PICKLES.

Mr. France spoke of inducing a large pickle-factory to make their vinegar of honey. On inquiry they informed him that they used acids to make their vinegar. Acid vinegar will eat up the pickles, he told them, while honey vinegar will keep them

in fine order indefinitely. Has it really come to this, that poisonous acids must be used when large quantities of apples, and honey in the flowers, go to waste every year—enough, if made into vinegar, to supply the whole world with a wholesome article? This ought to be stopped for the sake of the welfare of the nation.

A short time ago, when passing the wine-cellar of Mr. Maxfield, the wealthiest man in my town, I noticed a large glass jug boxed in wood, of the capacity of ten or twelve gallons, outside of the establishment. I remembered these jugs from my boyhood days as being used for sulphuric acid. The attendant of the cellar, an honest German from the "Fatherland," stood near by, and I asked him about the jug—what it had contained—and he said, "Sulphuric acid." I made no more inquiry as to what they used the stuff for, but I had my opinion about it. The owner of the establishment, and of innumerable farms and vineyards in the vicinity, evidently can not make money fast enough producing an honest grape wine, so he tries to increase his profits by the use of sulphuric acid in his wines, and thus helps to destroy the stomachs of his customers. It is the same with the acid vinegar. The use of it should be prohibited. Perhaps a large share of our inferior grades of honey could then be worked up into vinegar.

WHEN TO PUT EXTRACTED IN RETAIL PACKAGES.

Mr. France said that it had bothered him, sometimes, when filling retail packages, because a scum would rise on the honey after standing a while. But he found that, after storing the honey in a tank for a time, no scum would rise. Honey should, therefore, not be drawn into retail packages as soon as extracted.

I would say that it is not wise to fill retail packages ahead of the time wanted for the trade, on account of the tendency of almost all honey to granulate. It is true that, when honey is heated up to about 150 degrees soon after extracting, and bottled while hot, and sealed, it will or may remain liquid for all time. I have some glass cans in my honey-house to-day, Jan. 25, containing honey which was heated the next day after extracting, Aug. 20, and some which was not heated. The former is perfectly liquid, the other is perfectly solid. All honey, however, can not be depended upon to remain liquid, even when heated up as stated. It is better to store honey in a metal tank, and heat it up as soon and as often as it begins to show any granulation, then draw off into small packages when wanted. This method will save trouble and vexation. When one has his customers educated to the point that they will take the granulated honey, that would, of course, make a difference.

SCRAPING SECTIONS ON COARSE-MESH WIRE CLOTH.

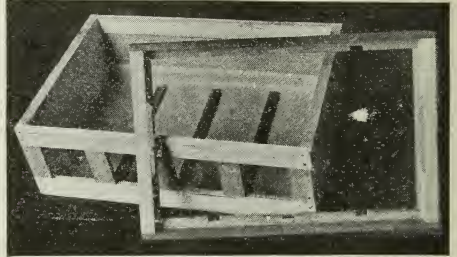
During the afternoon of the second day

there was a little unoccupied time which Mr. Chester A. Olmstead, of East Bloomfield, improved by explaining his rapid method of handling comb honey, scraping and crating it. He said a great deal of time is unnecessarily wasted by many a bee-keeper in getting his honey ready for the market because his comb-honey supers are faulty. The scalloped bottom-bars of section-holders, he said, are a nuisance, as the sections and bottom-bars do not fit each other exactly, causing propolis to be deposited in places where it can not be gotten at very readily. If all the gluing is done on the bottom or top of the section or the *out* edges of the (beeway) section, then it can be scraped off easily and quickly by sliding the sections over a tightly stretched piece of wire screen of $\frac{1}{4}$ -inch mesh; whereas if any glue is deposited in the scallops it has to be removed with a knife, which takes more time. He does not use a top-bar to his section holders; but for what reason I do not now recollect. The section-holder with a top-bar (in other words a wide frame) is my own preference; and why this of A. I. R.'s invention has ever been relegated to the things of the past (by the manufacturers) is really more than I can understand. I can not yet believe that the honey-producers are wholly to blame for that, although I find but few of the bee-keepers around me who speak in high terms of it. I have heard many objections raised to the wide frame, particularly by those who had had no experience with it; but none of those objections have been worthy of any consideration. I believe I am in a good position, judging from the merits of the wide-frame super as compared with other kinds, as I have the different styles in use. Give me the wide-frame super every time. I can handle them quicker on and off the hive; I can take the honey out quicker than from any other super, and I can certainly clean more sections from them in a given time. I have many a time been greatly surprised to learn how long it took some of the friends to crate their honey. With wide frames it is a short job indeed, and I have not used Olmstead's screen-scourer either. But it is with my sections as Mr. O. says: The propolis is just exactly where it can be scraped off with one swoop, and no fooling. I fully agree with Mr. Olmstead—no scalloped bottom-bars for me. A straight and (if any thing) a narrower bottom-bar than the bottoms of the sections is what I want, and top-bar the same. Whether the separator is solid wood, fence, wire screen, or what not, is another consideration which may be taken up at another time.

OLMSTEAD'S METHOD OF PUTTING PAPER TRAYS IN SHIPPING-CASES.

To return to Mr. Olmstead's rapid method of crating honey: He has his own method of placing paper trays, and the strips for the sections to rest upon, in his crates, and he is making some good points indeed. I may be able to give an illustration of his device if my camera will do the work well. The

frame which pushes the paper tray—folded around the frame—into the crate has notches cut out in proper places; and after the paper is pushed down to the bottom the sticks are dropped in after putting a little glue on them. A little glue was also dropped into each corner of the crate before the tray was put in, so the paper and also



the sticks are held thus in their places. As soon as the frame is withdrawn, the outside sticks are finally put in their places with a little glue, and the crate is ready to receive the sections.

A special point Mr. O. made, was, have the strips in the crates short enough; when a trifle too long they will cause the edge of the paper tray to turn inward just a little, and sections are apt to catch when pushed down, and thus spoil the tray. The follower usually sent out with the crate stuff is placed by Mr. O., not at the outside, but in the center of the crate. He thinks this will serve as a protection when crates are stacked up one on top of the other.

I have never used nails to fasten the strips in the crates, but always took gum arabic for this purpose. I could place them near enough by eye; and gum arabic, not setting like glue, would give me an opportunity to slide the strips a little one way or the other if it seemed necessary. Before shipping the honey the gum arabic would become dry, and hold the strips perfectly. I have never found it necessary to glue the tray into the crate with my way of putting in the trays. I can fold from three to five papers over a board of the right size at one time, and with a little practice it takes almost no time to place the tray where it belongs. Then I drop in the five strips haphazard, and stack up the empty crates thus prepared. When ready for crating sections, the five strips are placed close together, side and side, upon the work-bench, and with the brush the liquid glue is spread on with one stroke; then they are placed back in the crate by eye, as described above. Prepared gum arabic, if it stands around long, will often sour and become moldy. A little salicylic acid stirred in will prevent this. This little kink may be of value to some.

Naples, N. Y.

[This communication came in some months ago; but owing to a lack of space at the time, and owing to the further fact that

many of the points suggested would be more seasonable later on, we have held it until now.

The ordinary process of making foundation subjects the wax to a high temperature long enough to preclude all possibility of any of the germs in the spore form being left alive. We have yet to hear of a case where foul brood was ever transmitted through foundation.

You quote Mr. France as saying that "the hives were boiled, so also the honey." I do not understand whether you mean that the hives were merely immersed in boiling water, and the honey brought to a temperature of 210, and then allowed to cool. One of our old subscribers, Mr. J. A. Buchanan, some years ago boiled some foul-broody honey for seven or eight minutes. He took it off, and, when cool, fed it to his bees. In every one of the colonies fed with this honey, foul brood developed within ten days. A number of laboratory tests have been conducted, showing that the spores of foul brood will sometimes resist a boiling temperature for *two hours*. The spores must not be confused with the active bacilli, which would be killed almost instantly, probably, by a boiling temperature. We shall be glad to hear from Mr. France on this point, as his experience has been very extended. But the question is so important that we can not afford to take chances nor make any mistakes. It won't cost much to err on the safe side.

The scheme of scraping sections on coarse-mesh wire cloth is a valuable one, and I do not remember seeing it in print before. Our subscribers will have a chance to test it within a week or ten days, and we shall be glad to get reports from all who try it.—Ed.]

SELLING BOTH BY WEIGHT AND THE PIECE.

Some New Old Ideas.

BY T. K. MASSIE.

Seeing that the question of how we shall sell our section comb honey, whether by weight or by the piece, is being discussed pro and con, I write to ask, why not compromise the whole case by adopting a size for our sections that will admit of selling both ways—do justice to all parties concerned, and end the discussion? A section which can be sold either by the pound—one that will hold a full pound—or by the piece will do this. Of course, all sections of any size whatever will not weigh exactly the same; but I have said, and here repeat, that the $4\frac{1}{4} \times 5 \times 1\frac{3}{8}$ section comes nearer averaging a pound than any other size. Well-filled sections of this size will average rather over than under 16 ounces, the size my selfishness causes me to desire. We are all more or less selfish. If I sell a man 20 sections by the piece, and tell him that they will average a full pound, and then place them on the scales and show

him that the actual weight of the honey is 20 pounds and 5 ounces, his selfishness causes him to think that he has gotten the best of me in the deal, and he becomes then my permanent customer. My selfishness caused me to delight in giving that overweight for the sole purpose of securing a permanent customer. If I had sold him the honey by weight he is likewise pleased. We should also delight in giving full weight. If I charge him half a cent per section more when selling to him by the piece, he is still satisfied, because, looking at the matter from his standpoint, he has a little the best of the bargain. As a rule, the American people always want the best end of a bargain. Then why not adopt the $4\frac{1}{4} \times 5 \times 1\frac{3}{8}$ section for a standard?

Since 1886 I have tested more different styles of hives, frames, separators, sections, and other devices than almost any one; and in my early investigations I had a desire to give the results to the public through the bee-journals; but when I would send in my experience the articles nearly always went to the waste-basket. Frequently I told of the advantages of two-story hives, closed-end frames, shallow frames, wide vs. deep frame tops, sealed covers, etc.; but the result was always the same. When a theory presented itself to my mind I would follow it up to see if it would prove well in practice. I could not get the bees to fill the $4\frac{1}{4}$ square sections in the T supers with solid tin separators. Theory suggested that the solid separators divided the bees up into too many small divisions. I saw that, while a separator was necessary for best results, it should be as near nothing as it was possible to make it. In 1887 I made 6 separators of perforated zinc by nailing strips $\frac{3}{8}$ inch thick on each side, one on each end and one on the center of every $4\frac{1}{4}$ inches where the edges of sections would come in contact with it. In part of them I turned the long way of the slot perpendicularly, and in the others it was turned horizontally. I then cut the shoulders (beeways) off the corners of some sections, and placed them in the center of a T super between my zinc separators, the rest of the super being filled out with the tin separators. It was very clear that more bees were at work on the sections between the zinc separators than there were between the tins, and the middle sections were more quickly and better filled than the others.

The next season I placed the zinc at one side of the super, with the tins in the other. Result was about the same, but perhaps not quite so decisive. Theory suggested that these small divisions of bees ought to have side or horizontal communications with each other, and that this arrangement would give better ventilation. Practice (of course the experiment was not a thorough test) seemed to prove the theory a correct one. I had also been testing sealed covers for wintering, and the wide vs. deep frame-tops to prevent burr-combs. In 1889 or '90 I wrote an article for GLEAN-

INGS, setting forth the advantages of "sealed covers," "wide frame-tops," and advocating the adoption of what I there called a "perforated separator;" but the article, like some others, was never published. In that article I predicted that the $4\frac{1}{4}$ square section and the solid separators would not hold out to be "standard" always; that they both had to go. The great demand that has sprung up for the 4×5 section and fence separator has verified that prediction. I again predict that, ere long, the $4\frac{1}{4}\times 5\times \frac{1}{8}$ section will come into general use. I wish that such was the case now, as I wish to use it in my hive.

In the article above referred to I described how I thought the separator could be made, which was of tin, perforated like queen-excluding zinc, but have the perforations somewhat larger than those for drones, ends cleated where the sections came in contact with the separator, and use plain no-beeway sections. I saw that a vast amount of lumber was yearly wasted in the beeways cut into the sections every year, and insisted that the cleats on the separators should be made to carry permanently the beeways each and every year, save the great loss of good lumber, and rid ourselves of those objectionable corners. This feature is now carried out in the fence separators. I have never seen a Hyde-Scholl separator; but from the description given of it, it seems to embody the identical principles of the one I use, the adoption of which I advocated in the article above referred to. The fence separator carries out some of those features. I am now figuring on a separator by which I hope to use 36 sections in my super. During the fifteen years my hive was undergoing experiment I tried nearly every theory and device I ever saw suggested.

I made a device for raising several queens in one hive, and, notwithstanding the fact that I gave up the use of the Simplicity hive some ten years ago, I still have parts of all these "inventions" scattered around yet, which I can produce to prove, if necessary, that I have not been behind the procession in testing the various styles of hives, frames, etc., and in bringing to the front new inventions.

In May, 1891, I commenced a series of articles in a new publication, *The Bee World*, in which I referred indirectly to a few writers in hopes of drawing them into an argument in favor their pet "standard" theories; but in this I again failed. It seemed to me that some of our bee-keepers were so deep-seated in their prejudices, and so shortsighted, that they thought a new hive or other appliance, even though better than what we were then using, could never become standard.

Tophet, W. V., Feb. 20.

[So, friend Massie, you find that separators with free communications back and forth give better results than those that are solid, confining the bees to small compart-

ments in their comb-building. Your experience has been that of hundreds of others who have used fences in comparison with solid separators.

The $4\frac{1}{4}\times 5$ section is another change in size, and it would, perhaps, be very difficult to get it introduced. It was hard enough to start the 4×5 ; and the general public wants something that can be sold at retail for 15 cents rather than 20.

We did not know that we had rejected any of the communications referred to. If we did they probably came at a time when we were overcrowded with copy. At such times, unfortunately, we are not able always to use the best or most important that comes to us. Why this should be so, no one, perhaps, but a publisher can fully appreciate.—Ed.]

FIRST SWARMS.

How to Hive Them in the Parent Hive and Make Them Stay; When to Practice Shook Swarming; Some Seasonable Kinks.

BY J. E. HAND.

Every honey-producer knows how annoying it is to have a swarm issue and leave a lot of partly filled sections on the parent hive, and near the close of the honey harvest. Perhaps the supers from the old hive would not fit the new hive. I well remember, about fifteen years ago, this was exactly the fix I was in, and I knew that, if I could hive back those swarms and make them stay a week, those sections would be filled, and it would then be so near the close of the harvest that the bees would have no further desire to swarm; but how to make them stay, that was the rub. Right at this time I ran across an article in one of the old bee-journals which I was reading, as I was lying under the shade of the trees one hot day in July, watching for these same swarms. I believe it was from the pen of the venerable Chas. Dadant. It ran thus: To hive back swarms and make them stay for a week to ten days, and do work equal to any new swarm without cutting out any queen-cells, simply hive the new swarm beside the parent hive, and, after 48 hours, shake all the bees of the new swarm out of their hive in front of the parent hive, and let them run in. The desire for swarming is now satisfied, and the queen-cells will be destroyed. I then tried this plan on all swarms that came out after that during the rest of that season, and every swarm so treated worked with a vim equalled by only a new swarm, and none of them swarmed out again. This is one of the old kinks that is worth keeping in sight. I shall try it again the coming season.

I notice on page 119 Mr. Doolittle advises making "shook" swarms a week or ten days before the honey harvest. Now, I know from sad experience that this is very dangerous advice; and as swarming time

is near, some may be led to make such swarms to their cost. I once thought that was the right way; but I know better now, and I paid for my knowledge. I went to an out-apiary some five years ago, and made about 20 brushed swarms, as I supposed, about a week before the honey harvest; but, alas! it turned out to be about one year before the honey harvest, for neither clover nor basswood gave any surplus, and you can imagine what a job of feeding I had; whereas, if I had waited until the honey-flow was on in good earnest I should never have made them, and so would have saved myself a lot of trouble and expense. My advice to all is, be sure of your honey harvest before you make any artificial swarms. The bees themselves know a great deal more about these matters than some bee-keepers, and they never swarm until there is plenty of honey coming in. It is well to follow nature's plan along the line of swarming as well as queen-rearing.

Birmingham, Ohio, May 5.

[The hint here given from the much respected Charles Dadant is a valuable one, for the simple reason that, in a large number of apiaries, there is a diversity of hives and supers. This often makes it impracticable—yes, impossible—to carry out the usual mode of procedure, to hive on empty combs or frames of foundation on another hive put on the old location, putting on it the super that was on the parent hive. I should be glad to get reports from those who have either tested or can test the Dadant method of preventing after-swarms.]

Regarding the method of making shook swarms a week or ten days before the honey harvest, we have had other reports showing that the bees must not be shaken much before actual swarming preparations have been made, or else the whole artificial plan will result in failure. The bees must begin to *feel* a condition of prosperity that will bring on a desire for natural swarming, before it is practicable to carry out forced swarming.—ED.]

FLANGED CUPS.

Is it Necessary to Use Royal Jelly? shall Protectors be Used?

BY SWARTHMORE.

Mr. Root:—I trust you will allow me to defend my position in the criticism of Mr. Phillips' article on "Modern Queen-rearing," in your May 15th issue. In your editorial footnote you seem to be laboring under the impression that Swarthmore flange cups *must* be drawn "one at a time." If you will read again my notes you will see that I make special mention of the fact that one cell or the barful can be removed from the top of the hive without lifting the frame; and, I may add, without even opening the hive, or in any way disturbing the bees,

without smoking or prying. Simply raise the cover, and there they are. Take one or all as you like. When cells are attached to the under side of a bar, in the middle of a brood-frame, as you recommend, it is *always* necessary to lift that frame before you can get at your cells. This operation tears the bees apart and otherwise disturbs them, and they do not recover from the shock for several hours. During this time the cells are, to a certain extent, neglected, and honey-gathering is seriously retarded.

When you draw a flange cup, or lift a Swarthmore cell bar, no ruptures are made, thus no mending of brace-combs has to be done by the bees. The cluster about the cells need not be even broken; in fact, the bees continue to feed the cells while it is in hand.

I do not wish to force my methods upon any bee-keeper; but I should like to be understood by any who, perhaps, would like to use methods to reduce labor and increase product, both in quantity and quality. The flange cup will win out, for the reason that it saves much labor, increases product, adds to quality, and reduces expense—four most excellent points, you must admit.

Now as to swabbing new cups. You say it is just as easy to transfer jelly. I say it is not, and there is just where we differ. Does it not stand to reason that a person can simply thrust a stick into cups more rapidly than he can transfer a drop of jelly into each? It need not be jelly taken from a queen-cell. It can be any chyle food found in any cell. All the cups may be primed at once, and done with for ever, as long as that cup lasts, and we have had some in use four years.

By the jelly plan you must do it while the food is warm or you will chill the larvae; furthermore, you must have it fresh—all careful, painstaking work; and if it is really unnecessary, why insist that bee-keepers fuss in that manner, if a better way has been found?

I thank you for your kind mention in the rest of your footnote, and feel encouraged to make further study into labor-saving methods for bee-keepers.

Swarthmore, Pa., May 27.

[To this our Mr. Geo. W. Phillips, who has reared queens in Jamaica, his old home, and who has subsequently been our foreman at the Medina queen-rearing yards, replies:]

Mr. Pratt's article on "Modern Queen-rearing" (see May 15th GLEANINGS) was published when I was hard pressed with work at school, and, consequently, I could not give it the attention it demanded. Since he has written again, however, I take the opportunity to make a few remarks with reference to the points on which he differs with me, and declares to be "wasteful, extravagant, or unnecessary."

Is the use of royal jelly in grafting "wasteful" in time, patience, and quality of queens? Has Mr. Pratt found by actual

experience that the supplying of jelly wasted his time and tested his patience? The job may be so expeditiously performed that I don't see how a bee-keeper of his caliber could find it trying; and as for saying that its use reduces the quality of the queens, I am sure the assertion is so well refuted by experience that any attempt on my part to disprove it would be superfluous.

That cells may be grafted without jelly, I am aware; but I am also aware that the percentage of such cells accepted will be smaller than the other. But how nicely will the tiny drop of jelly receive the larva from your grafting tool, while to lay one on the hard dry bottom of a cell is a comparatively difficult task! Besides, when one has over a hundred cells to graft at one operation the use of jelly becomes a necessity or the larvæ will die before he gets through.

There is not nearly as much danger of getting larvæ chilled by using "cold" jelly as Mr. Pratt represents. There is more danger of having it exposed to the air, and becoming hard and unfit for use. Perhaps jelly will never become too cold to use where the weather is warm enough to allow the transferring of larvæ. True, bees will remove the jelly supplied in grafting, but not until after it has served its purpose.

As a rule, queen-cells built from wooden cups may be given without protectors; yet, since it entails but little extra work is it not better to give them protectors? No longer ago than yesterday one of the apiarists here called my attention to a cell, given unprotected, that had been torn open at the side. Now, during a honey-flow bees will often build comb all over the cells; and in removing this a cell may be slightly damaged. The bees will destroy this promptly; while if given in a protector it will hatch in due time. It may be, however, that Mr. Pratt can accomplish in his miniature nuclei what can not be done in larger colonies.

Mr. Pratt says it is wasteful to destroy good compressed cells every time virgins hatch. Did I say otherwise? Let me quote from "Modern Queen-rearing." "This makes an artificial embryo queen-cell of great durability. All that is necessary in order to use it again is to trim off the outgrowth even with the wood, and let the bees have access to it, when they will clean out the residue of royal jelly left in the bottom by the last queen hatched." Is this destroying the cell? Neglect to trim off the outgrowth, and graft in the full-sized cell, and the bees will soon gnaw it down to the proper length—that is, if they accept it at all.

I can see that using a cell-frame so constructed that the removal of the cells from a colony could be accomplished without lifting out the entire frame would be an advantage. But a detachable top-bar can be easily used with our wooden cups, and the arrangement would be as handy as Mr. Pratt's; in fact, Mr. Huber Root recommended such a contrivance to me more than

a year ago, but somehow I neglected using it. I am always open to conviction, and am ever ready to admit a blunder or adopt the superior device of a brother bee-keeper. I have been fair in trying Mr. Pratt's queen-rearing system, but have not been able to make it work. I tried it in Jamaica, and in this country as well, but have never succeeded in getting even one queen fertilized. Moreover, I am not alone in this respect. I was recently speaking to Mr. F. A. Hooper, of the firm of Hooper Brothers, Kingston, Jamaica, one of the largest queen-breeding establishments in the world, and he declares that their experience has been identical with my own. Nor are these the only ones. That Mr. Pratt's system is practical in his own hands, I firmly believe; but until he can render it workable in the hands of the masses it is hardly fair to expect us to adopt it in preference to those which have proved to be satisfactory. —G. W. P.]



DOES A QUEEN MEET A DRONE MORE THAN ONCE? MORE PROOF THAT SHE DOES.

As Mr. Phillips, on page 286, has asked others to report, I will give my experience. In 1884, while standing by a hive I saw a queen enter, evidently having just mated. As I had watched and seen one go and return with the drone organs attached two days previous to this, I was astonished. My first thought was that a queen had entered the wrong hive. On opening the hive I found but the one queen moving quietly over the combs, and she appeared to be at home. Up to this time I had accepted the statement of others that queens mated but once. After this I spent all the time I could spare watching queens but saw nothing more that season.

June 22, 1885, I saw a queen take her flight, and return, evidently having met a drone. The same queen flew out and returned June 24, with the same evidence of having met a drone. July 10 I saw another go out, and return with the drone organs attached. The same queen flew out and returned with the drone organs attached, July 24.

I have spoken of this to a number of old bee-keepers, but they all laughed and winked at it.

Now, to me this does not seem strange or unusual. Copulation does not always impregnate. There is proof of this in all domestic animals, and why not with bees and other insects?

Mr. Phillips also says, page 286, that the

copulatory organs of the drone are, after a short time, ejected. Is he sure of this? Some time in the '80's Thomas G. Newman, in the *American Bee Journal*, made the statement that they are mostly absorbed. My own observations confirm this. If Mr. Phillips will rear a queen this season in a single-comb hive, with glass sides, and, after she is mated, go once in two or three hours he will see that the drone attachment will slowly diminish in size, apparently drawing in until, by the second morning, it will disappear.

HENRY JONES.

Brant, Mich., May 10.

[This is the third report we have had of this kind, and I believe we may now conclude that a queen, before she begins actual laying, may meet a drone more than once. Our correspondent makes the point that "copulation does not always impregnate;" and when he says there is proof of this in all domestic animals, he is stating a well-known fact. It may be questioned, however, whether the queen, *after she once begins laying*, meets a drone the second time. Editor Hutchinson suggests that it is possible because of the fact that queen-breeders have had reports of pure tested queens that they have sent out turning hybrid. But I account for this experience, which is quite common among all queen-breeders, by the fact that a daughter inadvertently, or at least unknown to the owner, supplants her mother. She has the same markings, and is supposed to be the same queen; but she has met a hybrid or black drone. Her owner naturally supposes that she is one and the same queen—that she "never was pure in the first place," and that he "now has proof of it," when in actual fact he is entirely mistaken. Cases of this kind are so easily possible that I should prefer to accept this theory to the other one, which seems so improbable.—ED.]

HOW TO GET THE LARGEST INCREASE BY DIVIDING.

I have six colonies of Italian bees, fairly strong. I wish to increase so as to secure as many colonies as possible by fall. How many frames to a nucleus would give the best results? Would it be preferable to buy and introduce queens, or give each nucleus eggs and brood, and allow it to raise its own queen? Forage in my locality consists chiefly of flowers and fruit blooms, white and sweet clover. I am willing to feed if better results can thereby be secured.

My bees are pure Italians, or supposed to be; yet one colony is, and always has been, so cross as to make handling it very difficult and unpleasant. Would removing the queen from this colony, and introducing one from a colony more well-disposed, correct in time this objectionable feature?

Chicago, Ill.

E. W. P.

[I would not have the nucleus less than two-frame, and generally three-frame would be better. If you wish to make a large in-

crease in the shortest time possible, buy queens in dozen lots. If economy is a consideration, then raise your own queens. Give to each nucleus, as fast as it is formed, a ripe queen cell, or, better still, a young virgin in an introducing-cage. If you raise your own queens, start a batch of cells; and when the virgins hatch, or about the time they hatch, form the nuclei by dividing each colony up into two and three frame nuclei. The two-frame should have more brood, and the three-frame may be given the same quantity of brood in three combs. The entrances of all these nuclei formed should be closed for three days with wire cloth; but be careful to avoid smothering the bees. If the bees are shut in three days they will be likely to stay in the location when released. The cells or virgins may be given at the time of forming the nuclei. The nucleus left on the old stand need not, of course, be confined.

The colony having the cross bees should have the queen killed and another one in her place.—ED.]

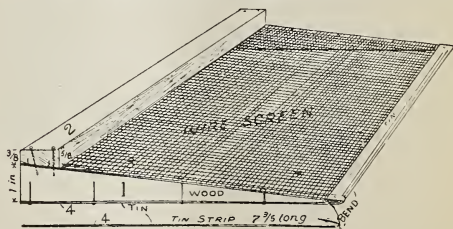
A SPECIAL HIVE-VENTILATOR.

I have seen in the *American Bee Journal*, as well as in Dr. Miller's book, that the bee-keeping world is in need of a better ventilator for the front of hives when handling or moving, and I send you a sketch of the one I made a year ago, and find I could not get along without it, and wish to offer it to the public through you in return for the good I receive from GLEANINGS and the *American Bee Journal*.

ALLAN'S VENTILATOR.

Take two pieces of wood 7 inches long, $\frac{3}{8}$ thick, one inch wide at the wide end; run to a point or wedge at the other (No. 1).

Take another piece of wood $\frac{3}{8} \times \frac{3}{8}$ by 12 for an eight frame Dovetail hive (No. 2);



now a piece of wire screen $7\frac{1}{8} \times 12$. Take a piece of tin $7\frac{3}{8} \times 12$, and fold in $\frac{3}{8}$ of the one side, as shown in the sketch (No. 4).

Now we are ready to nail. First nail No. 2 on to one edge of the wire cloth. Next No. 2 on No. 1; then put No. 4 on the bottom, and pinch down the fold so as to hold the screen in place, and nail from below. If the above does not prove to be all right after its introduction as a ventilator when handling hives, I will give up. Try one and let me hear from you.

W. L. ALLAN.

Monterey, Mex.

[You do not say *how* you use the ventila-

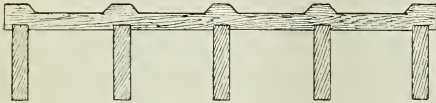
tor; but I assume that the sharp side or end is shoved into the entrance as far as it will go, the wire cloth passing under the frames. This makes it improbable that the bees would suffocate, as they would have to cover up the whole wire cloth. While they might do this they probably would not. I do not see why it is necessary to use the tin strip as shown in the drawing. There are some things that you have not fully explained.—ED.]

PLAIN SECTIONS WITHOUT FENCES.

I herewith inclose you a cut of the separator I have made, and used last season on several hives with the plain sections, as an experiment. I find it stronger than the fence. It is less apt to come apart than the latter. By the use of foundation in full sheets with this separator, the bees build nice straight combs as with the fence. I did not try strips for starters.

C. J. HOFSTETTER.

Fort Jennings, O., Apr. 11.



Top-bar, $\frac{1}{2} \times 1$ inch; cleats, $\frac{1}{2} \times \frac{3}{4}$ inch; top-bar is cut out at the bottom, and the cleats are pressed in and glued, or nailed from the top. Top-bar may be made like cut, to hang in super, or flush at ends to rest on tins.

[While such a device *could* be used, yet in a strong honey-flow the plain sections would be liable to be bulged and uncratable. In my opinion it would be very unwise to use many of them.—ED.]

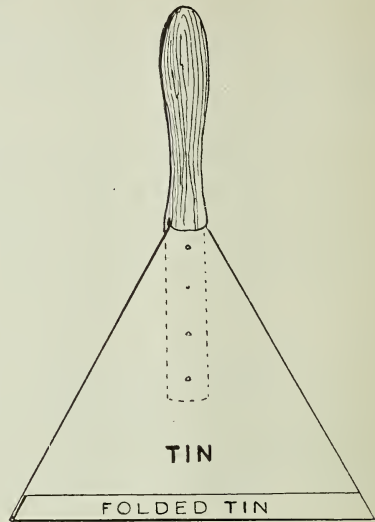
THE BINGHAM SMOKER.

Mr. Root.—Accept my sincere thanks for your timely and kind footnotes relating to Mr. Somerford's smoker remarks. Thanking you for the proffer of space in GLEANINGS, I can hardly improve your footnotes. As I have never received a complaining letter about the direct-draft smokers, of course I must rely entirely on the hundreds of letters extolling them. Many of those letters are orders for another smoker, with a remark about like this: "I have been using my old smoker 19 years. It is good yet, but I want another." These periods of use run from 10 to 21 years. I will make this proposition: If Mr. Somerford will send a money order for \$5 I will deliver to him in Cuba a four-inch copper smoker, the best ever made, and one that will last as long as he will keep bees. Of course, this is a special offer for a special smoker, the like of which has never been seen. Such a smoker at such a price would be economy as against his experience. If Mr. Somerford would prefer to have you see the smoker, and readress a freight, the same to Mr. S., it would be satisfactory to me to send it via Medina. T. F. BINGHAM.

Farwell, Mich., May 23.

A CONVENIENT HAND TOOL FOR FASTENING FOUNDATION.

I have never seen a foundation-fastener, to be worked by heat, sold for a small sum. I have made one for my own use, whereby I can fasten foundation much better and faster than by pressure. It is made of a



piece of tin in the shape of the cut. I never timed myself except once, when I fastened foundation in 98 sections in 25 minutes. Fold the tin at the dotted line. Fasten a wooden handle on the small end of the tin, and, when completed, it should resemble the cut.

L. EUBANK.

Guilford, Ind.

A PRETTY APIARY IN AUSTRALIA.—SEE PAGE 594.

We send with this a photo of one of our out-apiaries of 95 colonies near the river Murry, Mildura, Australia. We trust you will receive the same safe, and that you will reprint it. We are sorry we can not give a short article on the same, as we have only just established it; but we will try to send something next year.

NETTLETON BROS. & DEAN.

Mildura, Australia, March 29.

Can I, without injury to my bees, repaint the hives? GEO. M. PHIFER.

Charlotte, N. C., March 10.

[You can paint your hives while the bees are in them, without any difficulty. I would suggest, however, that the entrances be painted toward night. By morning they would be sufficiently dry so as not to cause trouble to flying bees. We make it a rule to paint our hives right in summer weather after the honey-flow, and have never discovered any inconvenience.—ED.]

MODERN QUEEN-REARING.

The controversy on queen-rearing, which has been going on in GLEANINGS for some time, has much interested me, a bee-keeper of over 50 years. The early methods of queen-rearing and those of Alley and Doolittle are familiar to me; they have been useful and instructive to us all. Apiculture, like every thing else, has made great progress during the last 20 or 30 years, and we must endeavor to keep pace with the times. It is well not to be too hasty in adopting new ideas or views of others; at the same time, we must not be so conservative as to be satisfied with old methods we have used, and think they can not be improved, or be prejudiced against any thing that is new, and that we do not thoroughly understand. Equally good results are frequently to be obtained with less labor and expense. All, I think, will agree that the less a colony is disturbed by frequent manipulations, the better will be the result; the frames in the brood-chamber should be lifted out as little as possible, and any manner of rearing queens that avoids constant disturbance must be a great advantage.

Mr. E. L. Pratt, in his article on page 492 on this subject, has fully explained how this can be done with a less amount of labor and better results. Mr. Pratt is evidently a very close observer, and with his system, the use of flanged cups resting on a removable top-bar, with holes to receive them, he is able to watch the action of the bees cleaning out any royal jelly that is placed in the cups, or the development of the cells, which he describes. With the removable top-bar holding cups, he can not only "pull out a cell without lifting the frame," but he can obtain all the advantage you claim by removing "the frame to take a pick of the best," "or discard those that have been rejected, and substitute others in their place much quicker" than by raising the frame and disturbing the bees as you have to do, as I understand from your criticisms in your note.

I think, Mr. Editor, you must have read this article hastily or you would have noticed the points to which I have called your attention clearly described by Mr. Pratt, where he mentions the few points in Mr. Phillips' article, which he criticises as being either wasteful and in some cases extravagant or unnecessary. Who was the first to use wooden cups and when? It will be interesting to know if there is any record in GLEANINGS, if you could kindly give your readers the benefit of it.

Philadelphia, Pa. J. M. HOOKER.

[See answer to Swarthmore on page 601.—Ed.]

BEES ON ROOFS AND IN TENEMENT HOUSES.

I live on the third floor in a three-tenement house, and should like to ask if you think it would be practical to make a start by keeping the hive in the front entry on

the third floor, and arranging it at the window so that the bees can come and go into the hive without their getting into the entry. The owner of the house objects to their being out in the yard on account of children; or would it be more practical to hire a lot close by and start in a small way by having one or two hives to start with?

ALBERT W. DAKIN.

Oneyville, R. I.

[It would be perfectly feasible to have a colony of bees on the third floor of the tenement house, with entrance communicating with the outside, in the manner suggested by you. Perhaps you could get permission to use the roof of the building; if so, you would be enabled to put out several colonies. In that case it would be necessary to provide some sort of shade for the heat of the day, as the radiation of the sunlight on the roof would have a tendency to melt down the combs unless hives were protected.—Ed.]

NOT TRUE THAT CANDYING IS A PROOF OF PURITY.

A wholesale grocer to whom I sold honey some time ago asked me if it were true that the granulating of honey is an evidence of purity. I assured him that it was to a great extent. He then told me that a few years ago he bought some bogus honey in jelly-tumblers from a molasses firm. During the winter that honey candied solid.

Ft. McKavett, Tex. F. L. WIGNALL.

[Glucose honey will candy providing it is not almost entirely glucose. We have samples in our office that are two-thirds and three-fourths glucose that we fixed up ourselves that have granulated solid, but they do not look the same as pure honey that has candied to a solid condition. It is a wrong impression that bee-keepers have that glucose mixtures will not candy; and it is one that has done a great deal of harm, because the dealers have been claiming to their patrons that the bottled stuff that they had will all candy, and that it won't candy unless it is pure. You can readily see how such heresy would hurt the bee business.—Ed.]

BEES DYING OF DYSENTERY.

I noticed in front of one of my hives, the ground literally covered with dead bees. I have been feeding good candy to get my colony up to the standard. These bees have a swollen appearance. Do you think the case paralysis? What would you advise?

S. A. BUTLER.

Belleville, Ill., Feb. 6.

[The case mentioned is probably one of paralysis and not of dysentery. If the former, it will have been cured by this time; if the latter, spraying powdered sulphur on the bees at night, when they are all in the hive, would probably do much to effect a cure. See editorial on this subject on page 482, May 15th GLEANINGS.—Ed.]

MILK FOR SEVERE CASES OF STINGING.

I note what you say, page 502, May 15, in regard to the two-year-old son of Mr. and Mrs. F. W. Metcalf being stung to death. That reminds me of a serious case of stinging at my apiary last year. One of my neighbors came along when a swarm was out. He was anxious to help hive them, and in so doing he got stung badly. In a short time I noticed he talked like one with a bad cold. His mouth was drawn to one side, and his tongue was so thick he could hardly talk. We were near the milk-house. My wife got a pan of milk, and he drank all he could. In a short time he was better. He thinks death would have been the result if he had not had relief very soon. I have seen two other cases similar to the above, and milk gave almost instant relief.

Freer, Minn., May 24. F. B. JONES.

[Milk might neutralize or dilute an active poison in the stomach; but I don't see how it could bring relief when the poison was not in the stomach but in the blood.—ED.]

SUCCESSFUL USE OF FORMALDEHYDE FOR THE CURE OF BLACK AND FOUL BROOD.

As I have had several letters wishing to know the result of my treatment with formaldehyde for black brood and foul brood, I will say that I have just inspected the apiary of 136 colonies, which were all affected with black brood, which I treated as described in GLEANINGS, and claimed that the treatment would cure both diseases if used as directed. I found it free, and clean of all signs of disease, and full of vim; and I also find other colonies which I treated, of less number, in other apiaries, free of disease. I think the treatment will cure in most localities if used as directed.

GEO. E. HINKLEY,
County Inspector of Apiaries.
Lompoc, Cal., April 16.

[There is not liable to be any visible evidence of foul or black brood so early in the spring, even if the taint of infection were there. You can determine the matter better in June, or, better, in July. Let us hear from you after the last date mentioned.—ED.]

Owing to a dispute between inexperienced friends, I should like to ask whether the old or new queen leaves with the swarm.

MRS. FRED O. JACKSON.
Muncie, Ind., April 25.

[It all depends on circumstances. As a general thing, the old queen goes forth with the first swarm; the second and third swarms are led off by the young queens. If some of the young queens should happen to be hatched out at the time the first swarm leaves, they might leave with the old queen. The old queen always goes forth with the first swarm if her wings are not clipped.—ED.]

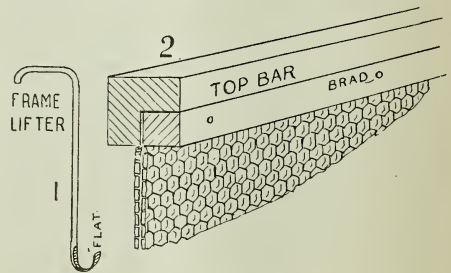
RUBEROID FOR HIVE-COVERS; COST, ETC.

I noted in one of Dr. Miller's Straws, May 1, where he alludes to ruberoid as a material used in Germany as a hive-cover. I think it makes a very good cover. I have about twenty of such weather-covers, made to telescope over the regular cover. The one-ply ruberoid can be obtained at \$2.45 per square. It is said to withstand all kinds of climate or weather. It is guaranteed to outlast tin, iron, or shingles, or other felt roofing. With each square is given enough ruberoid cement to cover all nails and tin caps. The only objection I have to it is that it is of a gray color, thus drawing heat to a certain extent. Yet this is the case with all roofing material for hive-covers; and while the rubber part has the consistency of rubber, yet it is no deterioration, as you say in your footnote.

A. H. WEIDENBERGER.
Pleasant Hill, Mo., May 8.

A FRAME-HOOK.

In GLEANINGS for April 15, page 395, you describe clamps for lifting and holding brood-frames. This reminds me that for some time I have intended to describe my frame-hook which, of all the appliances used in the apiary, I consider the greatest labor-saving and the most simple. It is nothing more nor less than a rod of round $\frac{1}{8}$ inch iron, bent as shown in Fig. 1, of any desired length. The upper end is made wide for a comfortable handhold, and the lower is filed to a flat point, and bent to catch securely *under* the top-bar of a frame. Inserted sidewise between the frames this hook is strong enough to move any frame enough to allow of its being pulled out by catching the hook under the top-bar; and when the frame is out, hanging on the hook,



it can be turned from side to side for inspection or brushing. Of course, it makes a hole in the comb near the center of the top-bar; but I consider that a possible advantage as a passageway for the bees in winter. The advantages of it are that one can pull out or move any frame that will stand the strain, without having his hand nearer than the length of the rod to the bees.

A METHOD OF FASTENING FOUNDATION.

Another improvement which I have not seen described anywhere consists of a rap

id method of fastening foundation in brood-frames. After trying all the known methods, I thought I had found the acme of perfection when the double-groove and wedge system was introduced; but I soon had no end of trouble from the wedge coming out after the frame dried in the hive; so I adopted the plan of cutting clear out (with a circular saw) half of the *under* side of the top-bar. The foundation is then laid on the shoulder which remains, and the half cut out is replaced by nailing with $\frac{3}{4}$ -inch brads tight against the foundation. With practice these can be put on so that the foundation will never "budge," even without wires, and it is easily removed by pulling the brads.

J. H. BURNS.

St. Marys, Ont., April 25.

[A frame-hook such as you show in the illustration might be very handy in a toolbox used on special occasions; but for every-day work I should very much prefer some sort of metal pry like a screwdriver, merely to loosen the frames, and then pick them up with the fingers. As a general rule, the more extensive bee-keepers use nothing but a simple pry.

Your method of fastening foundation is the same in principle as that used by E. Kretschmer, of Red Oak, Iowa. He has advertised a frame of this description for a number of years back.

There need be no trouble with the wedges slipping out, providing they are driven below the general surface of the wood. If the wedge is driven so it is just flush it will work out again. It should go down at least $\frac{1}{8}$ inch, then it will never come out.—ED.]

SUBLIMATED SULPHUR.

I have not noticed any thing in GLEANINGS about the kind of sulphur generally used for curing bee-paralysis; but I consider it very important to use only sublimated sulphur for this purpose, also called flour of sulphur, or purified washed sulphur. Crude sulphur is largely mined in Sicily, or made considerably from iron pyrites (FeS^2), and contains generally much arsenic. By heating the iron pyrites, about half the sulphur is separated, still containing considerable impurities with arsenic. To get a purer article, the best sulphur is distilled as is alcohol, the vapor condensing in a cold-storage room as a fine powder called flour of sulphur, or sublimated sulphur. The rest of the sulphur not distilled, not being pure enough, is heated until liquid, and then cast into bars, called sometimes roll brimstone, or bars of sulphur. These sulphur bars are largely ground into a very fine powder, and sold under the common name of sulphur, just as is the pure article, the sublimated sulphur. The difference in price is so little that no attention need be paid to it, as sublimated sulphur can be bought almost anywhere in the United States at 5 to 10 cents per pound retail.

To purify the sublimated sulphur still

more, it should be washed in a weak solution of ammonia in water (NH^3 and water), which removes any present sulphuric acid caused by oxydation while in contact with the oxygen of the air, and removes also the arsenic. Then the sulphur should be dried fast, which may be done successfully in the hot noon-sun, and then stored in a closed jar, so that as little air as possible can have access to it. Now we have a pure article, washed sublimated sulphur, practically free from acid and arsenic.

Visalia, Cal.

OTTO LUHDORFF.

[You will remember that Mr. O. O. Poppleton, while still affirming that the sulphur will cure, believes it is better to destroy the old queen, or perhaps destroy the old colony as well, using the combs and the brood to make a new start. There is a good deal of proof to show that bee-paralysis is an inherited disease from the queen; and, while it can be cured, there is great danger that it will return within a year. If it is not desired to destroy the bees, sulphur them, kill the queen, and give them a virgin from some healthy colony.—ED.]

PUTTING UP HONEY IN BOXES; HONEY CANDYING WITH A COARSE AND FINE GRAIN.

I have just had the opportunity of reading up some of the back numbers of GLEANINGS. On page 1001, Dec. 1, you speak of "Eastern honey" as though it were about all alike so far as its candying qualities are concerned. My experience is that basswood honey will candy in less time than clover and raspberry, and will have a *much* finer grain. I have never stirred any in either case.

I was all ready to put up some in the Aiken honey-bags last summer; but the short crop, with brisk demand, prevented. My plan at present is to put all of my basswood extracted in the bags, partly because it candies with a fine grain, but mainly because that peculiar flavor to which many object is hardly noticeable in the candied state. I wonder if that isn't true of other honeys that are described as being "minty." The clover and raspberry I expect to put up in tin cans partly because I have an early demand for extracted honey, but mainly because I think its *good* flavor is partly concealed by candying.

When the bags first came I opened one, poured some water in it and it leaked just a little. I tried a second and a third, with the same result; so I decided that, when I wanted to use them, I would paraffine them; then, if I wanted to, I could fill them with liquid honey and let them candy when they got ready, without the bother of watching and waiting till the honey was thick enough so the bags wouldn't leak, but not so thick that it wouldn't run well.

I paraffined a few, just to see how it would work, leaving them spread out full size. When I put them away I put them up two and two, slipping the one over the other

so as to keep out all dust. Later I filled half a dozen of them, again using one of the empty paraffined bags as a cover. So tight was the fit that the smallest of ants couldn't have got through to the honey, and yet they went on easily enough. At present they are about as hard as a frozen turnip. I am keeping them to hasten granulation in next summer's extracted honey. I proved by trial last summer that the mixing-in of some candied honey hastened the granulation of new honey.

I have been asking myself some other questions: Would the mixing of half a pound of candied honey that has a *fine* grain, with 60 lbs. of new honey that, left to itself, would have a *coarse* grain, cause the latter to have any *finer* grain than if the same amount of candied honey of its own kind were mixed with it—the amount of mixing done to be the same in both cases? Also would the mixing of candied honey, that has a *rapid* granulation, with new honey that has a *slow* granulation, cause the latter to granulate any more rapidly than if an equal amount of candied honey of the same kind as the slow-granulating honey were mixed with it? I shall seek to answer them later. I might add that I produce mostly comb honey. But the *home* demand for extracted honey keeps growing so each year that I keep producing more and more of it. JOHN S. CALLBREATH.

Rock Rift., N. Y., Feb. 22.

[In speaking of Eastern honey I did not have in mind honey produced east of Ohio, in New York, or the New England States, but, rather, that produced east of the Mississippi. Residents in the far West think of Ohio and Illinois as eastern States; and now that our country has become so large, and is populated west as well as east, it is becoming more and more the custom to speak of all territory east of the Mississippi as Eastern United States.]

Western honey, especially alfalfa, candies much more quickly, as a rule, than Eastern honey. If I had said clover and basswood, perhaps you would have understood me better. There can be no doubt that mixing granulated honey with ordinary liquid honey will hasten the process of granulation in the whole mass; but whether the fine-grained article would have a tendency to make other honey *all* fine-grained is something I can not answer. I should be glad to get reports from those who have tested it.—ED.]

HONEY FROM THE OPIUM-PLANT DESTRUCTIVE TO BEES.

In the May 15th issue J. A. Leonard asks about the poppy as a honey-plant. Let me give you my experience with that plant. About six years ago a friend of mine asked me to look at his bees, four hives. We found the bees crawling about on the ground and all over the hives, and dying by the thousand. They had plenty of honey, very few bees in the hive, and would not sting.

They finally died out. We did not find the cause. This was early in May. His wife had a very large patch of poppies of all colors in the garden. She gave my wife some seed, and also some to our neighbors. Next year we had a patch about 30 ft. square. I was taken sick about the time they came into bloom, and, while lying there, I could hear the bees humming on the poppies as if a swarm were out. When I got well I went first to the beeyard and found the same condition there as at my friend's. I thought it must be paralysis. I then went to two of my out-apiaries, but found them all right. On opening the hives you could smell the opium. We then destroyed the poppies and got our neighbors to cut theirs down also, and the bees finally were all right. I lost eight colonies and had about ten more weakened so that they made nothing that year. W. J. DAWSON.

Benton, La.

SOIL INFECTED WITH SWEET-CLOVER BACTERIA TO MAKE SWEET CLOVER GROW.

If Dr. Miller will order some soil infected with the sweet-clover bacteria to sow with his sweet-clover seed I think he then could get a small patch started, and, once so started, he could in a few years infect his whole farm and successfully raise sweet clover. Some Champaign County bee-man would gladly furnish a sample of soil containing said bacteria. BEN D. HALL.

Ogden, Ill., May 26.

[This was referred to Dr. Miller, who replies:]

I'm inclined to think that there would now be no great difficulty in getting a stand of sweet clover almost anywhere on my place. Plants here and there have grown upon it in different years, enough to establish the bacteria. Enough of these bacteria will be in the dirt attached to the seed to give at least a little start anywhere; and if the plants are allowed to grow year after year in the same spot there will be bacteria galore. So all any one need do to get a stand of sweet clover is just to keep at it.

The same thing is true of alfalfa—the specially interesting part being the fact established by the Illinois Experiment Station, that the bacteria of alfalfa and sweet clover are the same, so that alfalfa will flourish on any ground where sweet clover shows plenty of tubercles on its roots. A little infected soil on the elevated spots of a field will soon infect the whole.

I don't know, but I *think* that, when the ground becomes well filled with the proper bacteria, so as to produce a vigorous growth of alfalfa, it will give down nectar east of the Mississippi as well as west of it.

C. C. MILLER.

I should like to know if "alabastine" has ever been tried as a bee-hive paint, or if it is of any use as a lasting paint.

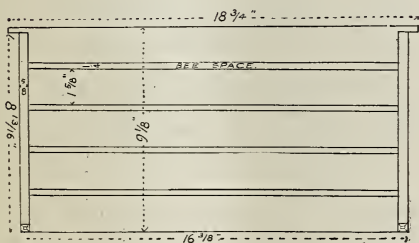
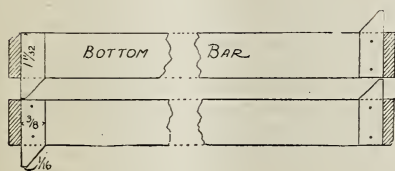
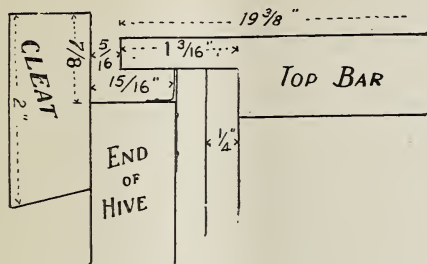
Wanatah, Ind.

L. A. WERNER.

[I have never heard of its being put to such use.—ED.]

A FENCE, DUMMY, OR DIVIDER; A SELF-SPACING FRAME.

I send a drawing of my bee-space dummy. I am going to use it this summer in working for comb honey. I will also use it when the bees are drawing out foundation. It is $\frac{7}{8}$ thick, same size as the standard frame, and spaced at both top and bottom.



I also send you other drawings showing how I space my frames at the bottom, and how I increase the length of top-bar on the frames.

FRANK BRUNSKOG.

Harvey, Ill.

[Your fence, or dummy, I believe, will be satisfactory for the purpose of securing regularly built combs; but it will not be as good as a solid dummy for dividing the brood-nest off or for reducing it down to, say, two or three frames in the spring in order that the little cluster may not be compelled to warm up more cubic air-space than is necessary.]

The scheme of lengthening the top bar by cutting out the rabbet, and nailing a cleat on the end of a hive, is a good one. We would have adopted this feature long ago but for the difficulty of making old covers for hives, now in use, fit new hives with cleats as shown. There can be no question at all but that, if all hives could be changed over to the plan shown in the cross-section

of the sketch, it would be a great advantage all round. The cleat, moreover, reaching clear across the end of the hive, would make a most excellent handle to lift it by. The projection of the top-bar would be lengthened out, which, to many of our friends, would be a very great advantage, and we should also secure a regulation bee-space between the end of the top-bar and the end of the rabbet, or what will be in this case the inside surface of the cleat.—ED.]

BEES MIXING IN SWARMS; VARIATIONS IN DRONES.

I have been in the bee business for about 22 years, and have seen some things that I did not understand, nor have I ever seen them explained.

1. I have hived a swarm of black bees half a mile from any Italians, and found several fine ones among the blacks, with pollen on the legs. Do field-bees often unite with a new swarm in that way?

2. I have never seen in your old A B C book any account of barred or yellow drones. I had one last year at Middlebourne, and have yet if it stood the winter all right. The drones had two (I believe) yellow stripes, but were not as bright as the working bees. The fuzz or long hair on them hid them more. Does this often occur, or is it a freak of nature? G. W. CARPENTER.

Rapidan, Va., May 23.

[The ordinary field-bees will very often unite with a swarm of bees; and it will be nothing unusual to find a few yellow Italians among the blacks after they have been hived. Swarming is a gala day—the one holiday of the year for the bees; and apparently a few field-bees can not resist the temptation to take a hand in the fun, with the result that they become a part of the swarm.]

The typical color of drones imported from Italy is decidedly on the leather-colored order. The yellow bands, if they show at all, are very dull or indistinct; but occasionally we get some sports from imported stock that show considerable yellow. Drones of the five-banded stock show beautiful bright yellow bands or bars. Sometimes the whole of the abdomen is one mass of yellow except the tip. It should be understood that the color of the drone does not determine his purity any more than does the color of the queen.—ED.]

SOME HONEY 44 YEARS OLD.

I clip the inclosed item from the *Lewiston Journal* of Jan. 14, which I think will be of interest considering the discussion now going on in GLEANINGS. I am trying to find the Brunswick man, and see that honey; then I will report about it.

Lewiston, Me.

S. J. HYDE

A Brunswick, Maine man boasts of some honey that has been preserved in a glass case for 44 years, and which appears to be as good as new except that it has shrunk from five to three and a half pounds.



Surely the wrath of man shall praise thee.—PSALM 76:10.

I have for years been remonstrating with various religious periodicals in regard to the character of their advertisements. When Electropoise first came out they were among the first to accept it, even when our agricultural papers refused it. Our older readers will remember how they defended themselves; and many of the editors of some of our most respectable journals declared it was a good thing, because ministers used and recommended it, etc. I got the United States Chemist, the best electricians of the world, and all really scientific men, to back me up, and then they, one after another, gave in. The *Christian Endeavor World*, perhaps, was the most stubborn of them all; and it was not till I had had a personal interview with Father Endeavorer Clark that it was rejected from their columns. Recently I have been remonstrating in regard to the character of the medicine advertisements—not only with the religious papers, but with our great dailies. Let me give you an illustration:

Two boys in our establishment, between 15 and 18 years of age, were found intoxicated. Investigation revealed the fact that they had sent to Cleveland for a jug of whisky. They were called up before the members of our firm, and underwent what might be termed in the cities a "sweat-box" ordeal. For a time we could not get them to talk; but the younger one finally ventured the information that they saw a piece in the paper about a man who drank "Duffy's malt whisky," and lived to be 107 years old. Now, this same daily had some of the most vigorous editorials, favoring the Anti-saloon League, and all temperance measures; but these boys failed to discriminate between the *editorial matter* and the statements they saw on the *advertising pages*. I wrote this Cleveland daily, stating the circumstances, and remonstrating because of the inconsistency of teaching temperance editorially and advertising whisky in the same paper. They replied that they lamented (?) they could not see their way clear to exclude such advertisements. They said this particular whisky came rather in the line of patent medicines; and they expressed a doubt as to whether they could legally exclude the advertisements of this special firm when they accepted other advertisements. This was a new thing to me; but by the help of the *New Voice* I quoted to them a decision of the Postmaster-General, that the proprietors of any periodical were at liberty to refuse any or all advertisements that were not suitable in their judgment for a home paper, or for conscientious principles. I made haste to

put this decision before the managers of this daily, and received a very courteous reply, thanking me for the pains I had taken; but Duffy's malt whisky keeps right on in every issue of that paper. At present there is running in the Duffy advertisement a full-length picture of a Methodist preacher. This preacher declares he is not only a minister of the gospel, but a temperance reformer; but, notwithstanding, his life was saved by Duffy's malt whisky when the doctors had given him up. I presented the matter to a Methodist clergyman, and he said they had repeatedly chased down such advertisements, and they have proved to be fakes in almost every instance. As soon as I saw the advertisement about the man who lived to be 107 years old, I drew my own conclusions about the truthfulness of the statement. Now, I would suggest right here that, if this statement is an out-and-out falsehood, the Methodist Church could begin action on these "Duffy" people by law, for slander on that great religious body; and we could come on them again for ruining our boys by their false statements in the advertising pages. Christ said, "I came not to bring peace, but a sword;" and I for one am ready to advocate the sword, and take the lead if nobody else will. Let me digress a little.

Edward Bok, of the *Ladies' Home Journal*, has for years past been criticising pretty severely our Sunday-schools, occasionally the clergy, and finally the religious press. When I saw the article on patent medicines, in the issue for May last, I had a big laugh, and I thought of our text, "Surely the wrath of man shall praise thee." I have before told you that my former pastor, A. T. Reed, evangelist, once said in his morning prayer at church, "O Lord, we thank thee for our enemies, for they tell us our faults when nobody else will do so;" and this thought has all through my life since that time been an inspiring one. Do not grow weary because you have enemies. Try to receive their hints (?) and hits, may be, with a Christianlike spirit, a hopeful face, and your enemies will do you more good than your friends. Now, I do not mean to say that Mr. Bok is really an enemy to Christianity, but it has sometimes looked that way. The article I have referred to contains the following:

The following percentages of alcohol in the "patent medicines" named are given by the Massachusetts State Board Analyst in the published document No. 34:

<i>Alcohol.</i>	
Lydia Pinkham's Vegetable Compound.....	20.6
Paine's Celery Compound.....	21.0
Dr. Williams' Vegetable Jaundice Bitters.....	18.5
Whiskol, "a non-intoxicating stimulant".....	22.2
Colden's Liquid Beef Tonic, "recommended for the treatment of alcohol habit".....	26.5
Ayer's Sarsaparilla.....	26.2
Thayer's Compound Extract of Sarsaparilla.....	21.5
Hood's Sarsaparilla.....	18.8
Allen's Sarsaparilla.....	13.5
Dana's Sarsaparilla.....	13.5
Brown's Sarsaparilla.....	13.5
Peruna.....	28.5
Vinol, Wine of Cod-liver Oil.....	18.8
Dr. Peters' Kuriko.....	14.0
Carter's Physical Extract.....	22.0

Hooker's Wigwam Tonic.....	20.7
Hoofland's German Tonic.....	29.3
Howe's Arabian Tonic, "not a rum drink".....	13.2
Jackson's Golden Seal Tonic.....	19.6
Mensman's Peptonized Beef Tonic.....	16.5
Parker's Tonic, "purely vegetable".....	41.6
Schenck's Seaweed Tonic, "entirely harmless".....	19.5
Baxter's Mandrake Bitters.....	16.5
Boker's Stomach Bitters.....	42.6
Burdock's Blood Bitters.....	25.2
Greene's Nervura.....	17.2
Hartshorn's Bitters.....	22.2
Hoofland's German Bitters, "entirely vegetable".....	25.6
Hop Bitters.....	12.6
Hostetter's Stomach Bitters.....	44.3
Kaufman's Sulphur Bitters, "contains no alcohol" (as a matter of fact it contains 20.5 per cent of alcohol and no sulphur).....	20.5
Puritana.....	22.0
Richardson's Concentrated Sherry-wine Bitters.....	47.5
Warner's Safe Tonic Bitters.....	35.7
Warren's Bilious Bitters.....	21.5
Faith Whitcomb's Nerve Bitters.....	20.3

In connection with this list, think of beer, which contains only from two to five per cent of alcohol, while some of these "bitters" contain ten times as much, making them stronger than whisky, far stronger than port or sherry, with claret and champagne far behind.

In connection with the above table, Mr. Bok proceeds to score the religious periodicals and the W. C. T. U. as well. I hope the friends who read Mr. Bok's editorial will also read the various replies made by the W. C. T. U. in the *Union Signal*. Had not the W. C. T. U. paved the way, and raised the standard of public morals to the extent it is now, Mr. Bok would not have dared to come out thus openly for reform. Let me quote two sentences.

There are no papers published that are so flagrantly guilty of admitting to their columns the advertisements, not only of alcohol-filled medicines, but preparations and cure-alls of the most flagrantly obscene nature, as the so-called religious papers of this country.

Beside me, as I write, lie issues of some twenty different "religious" weeklies, the advertising columns of which are a positive stench in the nostrils of decent, self-respecting people. Let the Woman's Christian Temperance Union officers counsel their publishers to omit these advertisements; and if they refuse, let these people discontinue their patronage of the paper.

The first of the two extracts may be pretty nearly right, except that I would not use the words "flagrantly obscene." A few of our religious papers have given place to medicine advertisements that might almost be so termed, but not many.

In regard to the second extract, the words "positive stench" are altogether too strong. Did not Bro. Bok have a *Police Gazette* lying on top of those Christian weeklies? and was not that the periodical he had in mind? It would be a rather unhappy combination, after all, to see the *Police Gazette* in such company.

I have said a good many kind words for the *Advance*, of Chicago. I have quoted from its columns in these Home papers; but I have also written to them twice, remonstrating against the character of their advertisements; and I have just about decided not to take it longer in my home unless a reform is made. They have so far never made any reply to my remonstrances.

Let me right here congratulate the editors of our agricultural papers. There is no escaping the fact that, at the present time, they hold up a higher standard of morals in some respects than do our relig-

ious weeklies. They reject advertisements that are accepted by many of the religious press. We must, however, make some exceptions. The editor of a periodical called the *Electrician*, when he was helping me in my crusade against Electropoise, told the vendors of the humbug toy he would give them \$1000 if they would get their advertisement in a single issue of the *Sunday School Times*. It never got there; and, may God be praised, we have at least one religious paper whose advertisements may be read aloud to the whole family every day in the year.

Now, friends, comes something hopeful. Every few days a periodical comes out declaring that hereafter no medicine advertisement nor any thing of that sort shall thereafter disgrace their advertising department. Let me copy from *Success*:

We do not admit to our columns medical, liquor, tobacco, or other advertisements objectionable in the home.

You will notice that that includes tobacco among intoxicants and patent medicines. You may, perhaps, remember that I have been urging our agricultural and home papers to refuse to accept articles describing the cultivation of tobacco. The *Rural New-Yorker* agrees with me in this, and there may be some other agricultural papers; and it occurs to me just here that I may be omitting a good many clean monthlies and weeklies; and I wish, dear friends, you would help me when the editor of your home paper decides to refuse to accept advertisements of this class. Send me the name of that periodical, and I will make mention of it here; and especially should I like to get hold of the periodicals that are taking a stand against tobacco. Let us see how many editors there are who will "dare to be a Daniel," and, if necessary, "dare to stand alone." I am well aware that, in drawing the line on patent medicines, we rule out some that contain no alcohol whatever, and some others that are standard useful and beneficial remedies; but it is so hard to discriminate that we have, with the *Sunday School Times*, *Success*, and other periodicals, decided to refuse all medicine advertisements. By the way, is it not a little cheeky for some of these medicine men to declare their stuff is non-intoxicating? Whiskol, you will notice, is one of this kind, and yet according to the table it contains more than 28 per cent of alcohol. The world is wondering—the mothers are wondering—why children seem so greedy to get hold of drink. Bok suggests that the patent medicines taken by the mothers for "that tired feeling" lay the foundation for the craving for beer and alcoholic stimulants, even before the child is born. Now, the great strides that we American people are making in the cure of disease is in the way of prevention rather than of cure. We are heading off typhoid fever by giving people better water to drink; we are heading off consumption by giving the people better air to breathe; we are heading off a host of

chronic diseases, not only by feeding our babies, but our older children, better food. May God help us in this conflict with Satan under the guise of some patent medicines, especially stimulating medicines. One of our trained nurses told me last winter that Peruna is whiskey and morphine. This may not be true; but if so, think of it, you fathers and mothers. Give the average person a bottle containing both whiskey and morphine, and tell him to take some whenever he feels bad, has the blues, or something of that sort! Is it a wonder we have idiots, lunatics, tramps, and criminals on our hands to take care of?

Perhaps I had better say in conclusion that may be Mr. Bok has made some mistake, for even a State Board of Chemists sometimes blunders. If so, GLEANINGS, at least, will be glad to be set right. Perhaps I should mention that, while Mr. Bok sets himself up on a rather high pedestal, at least in the article I have referred to, in almost the next number of the *Ladies' Home Journal* Emma E. Walker, M. D., while telling young ladies whether the use of candy is conducive to good health or not, utters the following:

A most ingenious use to which paraffine has been put in America has been the manufacture of artificial honey-comb. It duplicates the natural comb remarkably well. The little cells are then filled with glucose slightly flavored to give the honey taste, and the artificial product is ready for use.

As soon as I got hold of it I wrote a remonstrance to Mr. Bok, and asked him to submit it to the lady doctor. In response the following has come to hand:

Dear Sir:—It will give me pleasure to forward to Dr. Emma Walker your letter about the alleged use of paraffine in the manufacture of artificial honey-comb. If she should write again on this subject I dare say that she would be pleased to include in her article some correction of the misstatement which you say she has made. We thank you sincerely for calling our attention to the matter.

Very truly yours,

WM. V. ALFAXANDER.

Philadelphia, Pa., June 1. Managing Editor.

FAKE WEATHER ALMANACS, ETC.

The letter below is sent out by the Chief of the U. S. Weather Bureau, and it seems to me it hits the spot exactly. The only regret is that the Weather Bureau did not take this matter in hand to the extent of sending out such a warning to the people generally, long ago, especially since some of our leading agricultural periodicals have been so foolish as to give credence to the idea that any man living is able to make any sensible prediction of what the weather will be a week or a month or a year ahead. Our older readers are well aware that I have been hammering away on this matter for years past, and that I have promptly refuted newspaper statements that the *Weather Bureau* states the weather will be so and so during the season. The Weather Bureau is able to give a pretty correct prediction as to what the weather will be for the ensuing 24 or possibly 48 hours ahead. Once in a while they venture to suggest what it may be for *three* days in

advance; but no mortal has ever yet been able to tell *anything* about what the weather will be for a longer period than the above.

Sir:—It is the opinion of the leading meteorologists of the world that public interests are injured by the publication of so-called long range weather-forecasts, especially by such predictions as relate to severe storms, floods, drouths, and other atmospheric phenomena of a dangerous or damaging character; and the persistent efforts of certain men to foist their predictions upon the public, for personal gain, have reached such proportions that it is deemed advisable fairly and temperately to counteract the influence of those whom we believe to be preying upon the credulity of the public. Some of these men may be honest, and may, in their ignorance, attach undue importance to storms that may, accidentally, coincide in time of occurrence with certain relative positions of the planets, or with changes in the phases and positions of the moon, or with periods of increase or decrease in sun-spots, or apparent variations in the solar intensity. Men of this class find that for which they sincerely seek. They "mark when they hit, and never mark when they miss;" and the occurrence of a storm within the broad area of the United States, and, at times, within much broader areas, on or near the day for which they have predicted a storm, confirms, in their minds, the value of their system of prediction.

They may believe that they have discovered a physical law or a meteorological principle that has not been revealed to astronomers, meteorologists, or any other class of scientific investigators; but the publication of predictions that, by reason of their absolute inaccuracy, are calculated to be positively injurious to agricultural, commercial, and other industrial interests, casts a serious doubt upon the honesty of their purpose, and upon their asserted disinterested devotion to the public welfare. Such publications bring the science of meteorology into disrepute, and can not, therefore, be made in response to a desire to advance that science along useful lines; and they retard the work of the honest investigator, through whose efforts, only, can gains be made in a fundamental knowledge of the causation of weather that will justify forecasts for a month or a season in advance.

As a result of my personal verification of the work of long-range weather-forecasters, some of whom have so far gained the confidence of the rural press as to receive liberal compensation for their predictions, I am led to the conclusion that these forecasters knowingly perpetrate fraud, and do positive injury to the public at large. It is to be regretted that so many newspapers not only give space to these harmful predictions, but actually pay for them. Forecasts of this description can properly be classed with advertisements of quack medicines—they are both harmful in the extreme.

I hope the time will come when it will be possible to forecast the weather for coming seasons, and to specify in what respect the coming month or season will conform to or depart from the weather that is common to the month or season; but that time has not yet arrived, and I believe that you will be best serving the public interests when, without indulging in personalities or mentioning any long-range forecaster by name, you teach the community you serve the limitations of weather-forecasting, and warn it against impostors. Your local press should, and doubtless will, co-operate with you in this endeavor.

WILLIS L. MOORE,
Chief U. S. Weather Bureau.

Washington, D. C.

Temperance.

LOCAL OPTION IN ARIZONA.

On page 400, April 15, I asked for further particulars in regard to the Arizona law whereby it takes two temperance votes to offset one of the brewers. We have received the following letter in regard to the matter:

Friend Root:—I enclose you a clipping from the *Searchlight*, and ask you to make mention of it again in your temperance talks, if you think it will be profitable. If friendly exchanges would note the fact of our unfair law it might help us to get the law amended the coming winter.

Mr. Andrew Kimball, the president of the Mormon church in this State, is the father of the local-option law, and was forced to make the "two-thirds majority" concession to get the law passed. As you probably know, Thatcher, Hubbard, Central, and Pima are almost entirely made up of Mormon people. Pima is said to have broken all records in local-option elections.

I rejoice with you that the great State of Ohio has taken such a brave step in this matter of prohibition, and I earnestly hope you will drive this ruinous evil out of your State.

Bees here are doing well. I have just finished extracting from 152 colonies and got 20 cases. I think we can ship two large cars this season.

Safford, Ariz., May 11.

W. E. GLASSCOCK.

ARIZONA'S ROLL OF HONOR.

We have before referred to the results of the local-option contests in Arizona, and here call attention to a list of the districts recently voting on the saloon question, with the results of the same:

Safford No. 1—For prohibition, 109, against prohibition, 82; total, 191.

Thatcher No. 12—For prohibition, 116; against prohibition, 11; total, 127.

Hubbard No. 23—For prohibition, 11; against prohibition, 1; total 12.

Central No. 17—For prohibition, 29; against prohibition, 2; total, 31.

Pima No. 6—For prohibition, 102; against prohibition 1; total 103

Curtis No. 13—For prohibition, 19; against prohibition, 16; total 35.

We again call attention to the unreasonableness of the Territorial law as shown by the fact that Safford, while giving 109 for prohibition and only 82 against it, was lost to the cause because of the requirement of a two-thirds majority to accomplish saloon banishment.

In Curtis, also, the same is true. Our readers will notice the remarkable figures in the other districts, in two of which only one vote was registered against prohibition and in one only two. There are other places in Arizona which should be added to this roll of honor.

The above is certainly encouraging. If Arizona can do so much on the two-to-one rule, what could we not expect with a fair chance—say, letting the majority of the people decide whether they want saloons or not.

PROGRESS OF THE TEMPERANCE WORK IN TORONTO.

I clip the following from a letter from our good friend E. Grainger:

We have had a victory for the temperance cause in the western suburb of the city, Toronto Junction, where they have carried an act similar to the one you refer to, and the saloons have been closed up after a desperate fight with the liquor-men.

Toronto, Ont.

E. GRAINGER.

HOFFMAN FRAMES DEFENDED.

SINCE the discussion in regard to Hoffman frames has come up, there have not been wanting those who are willing to champion their merits. Under date of May 25 Mr. Geo. W. Brodbeck, Secretary of the National Bee-keepers' Association, writes:

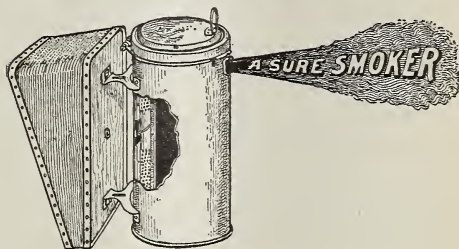
I note the exceptions to the Hoffman frame recently stated in GLEANINGS; and, so far as my experience goes, after the use of over 10,000, most of them will not hold good here in California.

Again, Mr. Harry Lathrop, the modern bee keeping poet, and an extensive bee-keeper, one who has written much for various bee-journals, says:

I am handling Hoffman frames that I got of you seven or eight years ago. They work as well as ever. They shrink and wear off some, and that makes up for the bee glue that would be expected to make them too close-fitting.

DANZENBAKER

20th Century SMOKER.



A SMOKER SURE FOR \$1.00.

GUARANTEED TO SUIT, OR DOLLAR BACK.

The last in the field, combines the best feature of others, with special ones all its own.

It has a perforated draft-grate at the side that strengthens the fire-cup and holds a removable lining and packing in place, that keeps the fire-cup cool, adding to its durability. This lining can be replaced at a small cost.

The draft-hole is midway of the fire-cup, directly opposite the only opening in the bellows, from which the air is forced and deflected upward or downward, or both ways, as desired, to secure a dense or hot or cool volume of smoke, which is determined by the filling and lighting of the fuel.

It is superior in make-up and material.

It has no parts that can clog with soot.

It will continue to smoke from three to ten hours, in light work, until all the fuel is consumed.

It wins friends that willingly recommend it to others.

Full directions for use, and preparing special fuel for subduing bees and destroying the eggs and larvæ of the wax-moth, with each smoker.

PRICES:

\$1.00 each; three for \$2.70 when sent with other goods. By mail, each 25 cents extra.

ADDRESS

F. DANZENBAKER

Care The A. I. Root Co., Sec. 1, W. Annex, Hort'l. Bld.,

St. Louis, - Missouri.

QUEENS Golden Italian and Leather Colored,

Warranted to give satisfaction, those are the kind reared by **Quirin-the-Queen-Breeder**. We guarantee every queen sent out to please you, or it may be returned inside of 60 days, and another will be sent "gratis." Our business was established in 1888, our stock originated from the best and highest-priced **Long-tongued Red-Clover Breeders in the United States**. We send out fine queens, and send them promptly. We guarantee safe delivery to any State, continental island, or European Country.

The A. I. Root Co. tells us that our stock is extra fine, while the editor of the *American Bee Journal* says that he has good reports from our stock, from time to time. Dr. J. L. Gandy, of Humboldt, Neb., says that he secured over 400 pounds of honey (mostly comb), from single colonies containing our queens.

Last winter was a severe test on Bees,
But Quirin's Famous Leather-colored Italians

wintered on their summer stands, within
a few miles of bleak Lake Erie. . . .

Queens now Ready to go by Return Mail.

Our new circular now ready to mail.

ADDRESS ALL ORDERS TO

Price of Queens Before July First.

	1	6	12
Select	\$1 00	\$5 00	\$9 00
Tested	1 50	8 00	15 00
Select Tested	2 00	10 00	18 00
Breeders	4 00		
Straight Five-band Breeders	6 00		
Palestine Queens	2 00	10 00	18 00
Two-comb Nuclei, no queen..	2 50	14 00	25 10
Full Colony on eight frames..	6 00	80 00	
Four fr's brood, 4 fr's idn....	5 00	25 00	

Special low prices on Queens and Nuclei in 50 and 100 Lots. Nuclei on L. or Danzenbaker frames.

Quirin-the-Queen-Breeder, Bellevue, O.

Victor's Superior Stock

Is recognized as such, to the extent that last season I was compelled to withdraw my ad. to keep from being swamped with orders. THIS SEASON I SHALL RUN MY

Thirteen Hundred Colonies Exclusively for Bees and Queens

—and will therefore soon be able to—

**Have 2000 to 2200
Colonies and Nuclei in Operation**

which warrants me in promising prompt service. Untested Queens \$1.00; select untested \$1.25; tested \$1.50; select tested \$2.50; breeders \$4.00 to \$7.00. Illustrated price list free for the asking.

W. O. VICTOR,
Queen Specialist. **Wharton, Tex.**

HONEY QUEENS

LAW'S ITALIAN AND HOLY LAND QUEENS. Plenty of fine queens of the best strains on earth, and with these I am catering to a satisfied trade. Are you in it? Or are you interested? **Laws' Leather and Golden Italians, Laws' Holy Lands.** These three, no more. The following prices are as low as consistent with good queens: Untested, 90c; per dozen, \$8.00; tested, \$1; per dozen, \$10. Breeders, the very best of either race, \$3 each.

W. H. Laws, Beeville, Texas.

Red Clover Italian Queens.

Fine Northern bred, originated from best long-tongued Red Clover breeders in United States; three-banded strain work on red clover, bred for business in full colonies under swarming influence; gentleness, honey-gathering, and wintering qualities are prime object. Untested, \$1.00; six, \$5.00; tested, \$2.00; six, \$10.00; select tested, \$3.00. After July 1st deduct 25 per cent. Satisfaction guaranteed. Remit by money-order. **Isaac F. Miller, Knoxdale, Pa.**

MY GOLDEN BREEDER

gave me 400 pounds of honey last year. Her daughters are 75c each; \$8 00 per dozen.

George W. Cook, Spring Hill, Kans.

**---Red-Clover and Italian Queens---
FOR SALE.**

Untested queens, 75c; tested, \$1.00; selected, \$1.25; breeders, \$2.50 to \$5.00. All queens by return mail for 1904. Send for circular. **G. Routzahn, Biglerville, Pa.**

---HONEY QUEENS---

Golden and Leather-colored Italians, tested, \$1.00; untested, 90 cts.; select tested, \$1.50.

H. C. TRIESCH, Jr., DYER, ARK.